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ABSTRACT

Two Spring 1999 surveys collected data weighted to provide national estimates of occupational program activities. Respondents in public secondary schools (SSs) were asked about program activities for 28 selected occupations within 6 broad occupational areas; those in less than four-year postsecondary institutions (PIs) were asked about activities for 32 selected occupations in the same 6 occupational areas. A majority of SSs and 90 percent of PIs offered at least one occupational program. Respondents of both surveys indicated that procedures for ensuring a match between course content and occupational skill requirements were used. Most SSs and PIs had developed or adopted skill competency lists. The most commonly used vocational completer criterion for SSs was passage of specific vocational courses. PIs offered a variety of educational or occupational credentials. (The 29-page report presents selected highlights from the 29 tables in narrative form and in 13 figures. Tables 1 and 2 present data for both surveys; tables 3-19 present data from the SS survey; and tables 20-29 show data from the PI survey. Every table, except Table 1, is presented as part of a pair. For each pair, the first page or pages are tables of counts and percentages of schools or institutions listed for certain program or sample characteristics followed by tables of the standard errors associated with those counts and percentages. Appendixes consist of a methodology section and survey instruments.) (YLB)

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NATIONAL CENTER FOR EDUCATION STATISTICS

Statistical Analysis Report August 2001

Features of Occupational Programs at the Secondary and Postsecondary Education Levels

FRSS
Fast Response Survey System

peqis postsecondary education quick information system

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Statistical Analysis Report August 2001

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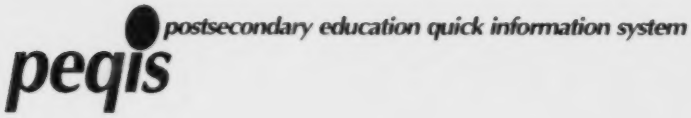

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EXECUTIVE SUMMARY

This report presents data collected from two surveys conducted in spring 1999: "Survey on Vocational Programs in Secondary Schools" and "Survey on Occupational Programs in Postsecondary Education Institutions." The surveys were conducted to provide the U.S. Department of Education's Office of Vocational and Adult Education (OVAE) with national estimates on occupational program activities.

The secondary school survey was conducted through the National Center for Education Statistics (NCES) Fast Response Survey System (FRSS), and the postsecondary survey was conducted through the NCES Postsecondary Education Quick Information System (PEQIS). The FRSS survey was administered to public secondary schools that include grades 11 and 12; respondents were asked about program activities for 28 selected occupations within 6 broad occupational areas. The PEQIS survey was administered to less-than-4-year postsecondary institutions, and respondents were asked to report on program activities for 32 selected occupations in the same 6 occupational areas. Survey findings are presented by school type (comprehensive, vocational) for the FRSS survey, and by level of institution (2-year, less-than-2-year) for the PEQIS survey. Most findings are based on schools and institutions that offered at least one of the listed occupational programs.

Program Offerings

Overall, a majority of all public secondary schools offered at least one of the listed occupational programs: 35 percent of the schools offered 1 to 5 programs, 18 percent offered 6 to 10 programs, and another 13 percent offered more than 10 programs. However, about one-third of the schools did not offer any of these programs. As one might expect, vocational schools were more likely than comprehensive high schools to offer the listed occupational programs; 98 percent of vocational schools offered at least one listed program, compared to 63 percent of comprehensive schools. On average, vocational schools also offered more occupational programs than did comprehensive schools; for example, 44 percent of vocational schools compared with 9 percent of comprehensive schools offered more than 10 of the listed occupational programs.

Ninety percent of less-than-4-year postsecondary institutions offered at least one of the listed occupational programs. About half of the institutions offered 1 to 5 programs, another 11 percent offered 6 to 10 programs, and an additional 27 percent offered more than 10 programs. A similar percentage of

2-year and less-than-2-year institutions offered at least one listed occupational program; 91 percent of less-than-2-year institutions offered at least one of the listed programs, compared to 88 percent of 2-year institutions. However, 2-year institutions offered more of the listed occupational programs; for example, 43 percent of 2-year institutions compared with 5 percent of less-than-2-year institutions offered more than 10 programs. With one exception (cosmetology), each specific occupational program was more common among 2-year institutions than among less-than-2-year institutions.

Among the public secondary schools and less-than-4-year postsecondary institutions that offered at least one listed occupational program, some broad program areas and some specific programs were more popular than others. A majority of these public secondary schools offered at least one program in two of the six broad program areas—business and marketing (85 percent) and technical occupations (60 percent). About half of these schools offered at least one program in each of the other broad program areas—mechanical occupations, the building trades, health/life sciences, and service occupations. Among less-than-4-year postsecondary institutions offering any listed program, a majority offered at least one program in three of the six broad program areas—service occupations (64 percent), health/life sciences (61 percent), and business and marketing (60 percent). About half of these institutions offered programs for technical occupations, and fewer than half offered at least one program in mechanical occupations and the building trades.

Ensuring the Teaching of Relevant Job Skills

Educators responsible for occupationally specific courses typically attempt to ensure that the content of their courses relates well to the occupations for which they prepare students. Various procedures exist to ensure a match between course content and occupational skill requirements, five of which were included in the surveys. For public secondary schools, the five procedures listed were industry advisory committees, surveys of employers' skill needs, followup surveys of graduates, student work experience (e.g., internships), and faculty externships (occupational work experience). Except for faculty externships, each of these procedures was used by at least two-thirds of all public secondary schools that offered at least one of the listed occupational programs. About half of these schools used faculty externships to ensure that courses teach appropriate job skills. For less-than-4-year postsecondary institutions, the five listed procedures were industry advisory committees, surveys of employers' skill needs, followup surveys of graduates, mechanisms for faculty to get recent work experience, and periodic internal reviews. Except for mechanisms for faculty to get recent work experience, each of these procedures was used in at least one listed occupational program by about four-fifths of less-than-4-year postsecondary institutions that offered at least one of the listed occupational programs. About half of these institutions used mechanisms for faculty to get recent work experience.

Skill Competency Lists

To examine the use of skill competencies in occupational programs, respondents in both surveys were asked whether skill competency lists had been developed or adopted for each listed occupational program. Most public secondary schools with one or more of the listed occupational programs had developed or adopted skill competency lists for their programs; 78 percent of these schools had developed or adopted skill competencies for all of their offered programs and 95 percent had developed or adopted skill competencies for at least one program. As with secondary schools, a large proportion of 2-year and less-than-2-year postsecondary institutions that offered one or more of the listed occupational programs reported that skill competency lists had been developed or adopted for their programs; 77 percent of these institutions had developed or adopted skill competencies for all of their programs, and 93 percent had developed or adopted skill competencies for at least one program.

Secondary schools and postsecondary institutions also were asked to indicate the extent of educator and industry input in skill competency development—that is, whether the skill competency lists were developed or adopted exclusively by individual course instructors or group(s) of educators, primarily by educators with industry input, with about equal educator and industry input, or primarily or exclusively by industry. Skill competency lists for at least one program were developed or adopted exclusively by educators, without industry involvement, in about one-third of all public secondary schools that offered at least one listed occupational program. About half of these schools reported a minor level of industry involvement in the development or adoption of skill competency lists for at least one listed program, fewer (34 percent) reported equal industry and educator involvement, and fewer still (6 percent) reported primary or exclusive industry involvement. Industry seemed to have a comparable level of involvement in developing or adopting skill competency lists at the postsecondary level. Almost half of less-than-4-year institutions with one or more of the listed occupational programs reported a minor level of industry input for at least one program, 36 percent involved educators and industry equally, and 8 percent used primarily or exclusively industry input.

Defining Vocational Program Completers

The FRSS survey asked secondary schools what criteria, if any, they used to determine whether a student is a "vocational program completer." The criteria listed were an end of program exam (not a course or graduation exam), passage of specific vocational courses, a minimum grade point average in the program, and passage of specific academic courses other than graduation requirements. The majority of public secondary schools with listed occupational programs used some criteria to determine whether a student was a program completer in at least one of their occupational programs (89 percent)

and in all of their programs (77 percent). The most commonly used vocational completer criterion was the passage of specific vocational courses; 75 percent of public secondary schools with listed occupational programs used this criterion in at least one program, while only 17 to 30 percent used each of the remaining criteria in at least one program.

Credentialing Processes

Occupational programs are sometimes linked to a credentialing process, through which students are awarded official documentation that they have completed a program and/or passed a skills test. At the secondary level, potential credentials (other than the high school diploma) are state or industry regulatory exams (resulting in registrations, licenses, or certifications) and occupational skill certificates. The FRSS survey asked whether each occupational program prepared students to earn either of these credentials. Seven percent of public secondary schools with listed occupational programs prepared students in *all* of their programs for a state or industry regulatory exam (leading to registration, licensing, or certification), while 41 percent prepared students in at least one of their programs to do so. Thirty-one percent of public secondary schools with listed occupational programs prepared students in *all* of their programs to earn an occupational skill certificate, whereas 55 percent prepared students in at least one of their programs to do so.

The PEQIS survey asked less-than-4-year postsecondary institutions whether their occupational programs prepared students to earn various types of educational or occupational credentials. First, the survey asked about two standard academic credentials—associate's degrees and institutional certificates/diplomas. The survey also asked about regulatory credentials—state registrations, licenses, or certificates—and two types of credentials offered by industry, associations, or unions—industry/trade certificates or diplomas, and company certificates (e.g., Cisco Certified Internetwork Expert). About half of less-than-4-year postsecondary institutions that offered at least one listed occupational program offered institutional certificates/diplomas in *all* of their programs, and 87 percent offered this type of credential for at least one of their programs. Next most common were associate's degrees and state-awarded regulatory credentials (registrations, licenses, or certificates), each offered by about half of these institutions for at least one of their programs. Industry/trade certificates or diplomas were available for at least one program at about one-third of these institutions, and company certificates were offered at about one-fifth of these institutions.

Relationships Among Program Characteristics

Most program characteristics cited in the FRSS survey, such as offering skill certificates or defining vocational program completion, represent program quality-control structures. These quality-control structures are often related to each other. That is, programs that used one quality-control structure often use another as well. Looking specifically at programs that offered skill certificates, these programs were found to be more likely than those that did not offer skill certificates to use skill competency lists, to have industry input in the development or adoption of their skill competency lists, and to define program completers. In contrast, programs that identified program completers were no more likely than programs that did not identify program completers to use skill competency lists, but they were more likely to involve industry in the development or adoption of competency lists and to offer skill certificates.

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INTRODUCTION

This Statistical Analysis Report presents data collected from two surveys conducted in spring 1999: "Survey on Vocational Programs in Secondary Schools" and "Survey on Occupational Programs in Postsecondary Education Institutions."[1] The surveys were conducted to provide the U.S. Department of Education's Office of Vocational and Adult Education (OVAE) with national estimates on occupational program activities.

Background

The surveys on occupational programs were conducted in response to increasing national concern over the gap between existing workforce skills and expanding workplace demands. That concern was triggered by the "workforce crisis" described in *America's Choice: High Skills or Low Wages?* (Commission on the Skills of the American Workforce 1990). It was also spurred by the recognition that with changing technology and work organizations, schools need to do more to equip students with the sophisticated and higher level skills that today's workplace requires (Grubb 1995). These concerns have set in motion a demand for clearer and higher standards in occupational education, and for increased industry input in the development of those standards (Lankard 1995).

The push for standards and accountability in occupational education was also intensified by several policy initiatives over the past decade. The 1990 Carl D. Perkins Vocational and Applied Technology Education Act required that states establish systems of standards and measures to assess vocational education programs. The 1990 Act also authorized federal support for business and education standards projects. In the early 1990s, the U.S. Departments of Education and Labor supported 22 projects to create skill standards for a wide variety of occupations and industries. The National Skill Standards Board (NSSB), authorized in 1994 by the Goals 2000: Educate America Act, builds on these projects and the efforts of other industry and occupational groups that have established skill standards. Its purpose is to stimulate the development of a voluntary national system of skill standards by creating a framework of career clusters within which skill standards can be developed.[2] To achieve this goal, NSSB supports partnerships of business, trade associations, education and community organizations, and other

[1] For the secondary school survey, a vocational program was defined as a sequence of courses designed to prepare students for an occupation (e.g., nurses' aide) or occupation area (e.g., health care) that typically requires education below the baccalaureate level. This definition did not include career exploration or other introductory courses that prepare students for adult life or for work in general (e.g., consumer and homemaking, and industrial arts).

[2] Career clusters are collections of courses, related to each other, within an occupational area (e.g., construction rather than just masonry or carpentry or health care rather than just medical technology or nursing).

stakeholders to develop skill standards. It also endorses skill standards systems developed by industry, labor, and education partnerships.

The 1998 Perkins Act builds on the above efforts by expanding the requirements for states to develop performance accountability systems, including state-level measures of student skill attainment. In keeping with the legislation, performance accountability systems are intended to:

- Include four core indicators that measure student performance and post-vocational education experiences in further education, training, and employment;
- Set performance levels for vocational outcomes, including student attainment of skill proficiencies; and
- Measure and report the performance of the states on the indicators.

It should be noted that although skill competencies are often used as or with skill standards, the focus of the surveys is on *skill competencies*, because competencies were easier for respondents to report on reliably than were skill standards.[3] These competencies might incorporate skill standards that were developed by the state and/or those developed locally through consultation between teachers and local employers. Some programs might have also integrated existing national standards.[4] However, the use of skill *standards* cannot be determined from these surveys. The surveys also focus on the role of industry in the development or adoption of skill competencies. Industry involvement is critical to ensure that students are learning the skills currently required by the labor market, particularly in fast-changing industries such as information technology, health, and manufacturing.

The secondary school survey was conducted through the National Center for Education Statistics (NCES) Fast Response Survey System (FRSS), and the postsecondary survey was conducted through the NCES Postsecondary Education Quick Information System (PEQIS) during spring 1999. FRSS and PEQIS are survey systems designed to collect small amounts of issue-oriented data with minimal burden on respondents and within a relatively short timeframe. Survey data were weighted to produce national estimates. Survey findings are presented by school type (comprehensive, vocational) for the FRSS survey, and level of institution (2-year, less-than-2-year) for the PEQIS survey. All comparative statements made in this report have been tested for statistical significance at the 0.05 level. However, not all significant comparisons are presented in the report.

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[3] Technically, a skill competency is a concept, skill, or attitude that is essential to an occupation; the level of attainment or performance established for a skill competency is a skill standard. Among school personnel, however, these terms are often used interchangeably.

[4] Although there are some existing national standards (e.g., the American Society of Engineers automobile standards), NSSB skill standards do not yet exist.

Secondary schools were defined in the FRSS survey as public comprehensive[5] and vocational schools that include grades 11 and 12 (i.e., schools that may offer upper level occupational programs), and the schools were asked about program activities for 28 selected occupations within 6 broad occupational areas. The less-than-4-year institutions in the PEQIS survey included 2-year and less-than-2-year institutions with Title IV eligibility,[6] and the institutions were asked to report on program activities for 32 selected occupations. (Appendix A provides more detail on how programs were defined and how occupations were selected; appendix C contains copies of the survey instruments.) In this report, the FRSS data are often presented separately for comprehensive schools and for vocational schools; data for both types of schools collectively are presented as data for public secondary schools. Similarly, PEQIS survey data are often presented separately for 2-year institutions and for less-than-2-year institutions; data for both types of institutions collectively are presented as data for less-than-4-year institutions.

For the secondary school survey, questionnaires were mailed to a national sample of 1,200 public secondary schools, comprising 600 vocational schools (including area or regional vocational schools) and 600 comprehensive schools. A total of 517 vocational and 561 comprehensive schools responded to the survey; another 38 entities were found not to be regular public secondary schools. The resulting secondary sample represents a national population of about 1,800 public vocational schools and 15,000 public comprehensive schools (table 1). For the survey of postsecondary institutions, 1,289 less-than-4-year institutions were sampled, comprising 689 2-year and 600 less-than-2-year institutions. A total of 595 2-year institutions and 505 less-than-2-year institutions completed the survey; another 117 entities were found not to be qualified postsecondary institutions. The postsecondary sample represents a national sample of about 2,000 2-year and 1,600 less-than-2-year institutions that includes public, private nonprofit, and private proprietary (i.e., for-profit) institutions (table 1). Further information on methodological issues can be found in appendix A.

Overall, a majority (66 percent) of all public secondary schools offered at least one occupational program that prepared students for the listed occupations: 35 percent of the schools offered 1 to 5 programs, 18 percent offered 6 to 10 programs, and another 13 percent offered more than 10 programs (table 2). However, about one-third (34 percent) of the schools did not offer any programs that prepare

[5] The term comprehensive school has exactly the same meaning as regular school. Comprehensive, or regular, schools do not focus primarily on special, vocational, or alternative education, although they may offer these programs in addition to the regular curriculum. A vocational school focuses primarily on vocational, technical, or career education and provides education or training in at least one semiskilled or technical occupation.

[6] Title IV eligibility means an institution is eligible to participate in federal student financial aid programs, which can include loans, grants, and work study programs. More specifically, institutions are eligible to participate in Title IV programs if they are accredited by an agency or organization recognized by the U.S. Department of Education, if they have a program of over 300 clock hours or 8 credit hours, if they have been in business for at least 2 years, and if they have signed a participation agreement with the Office of Postsecondary Education (OPE) in the Department. Eligibility was verified with the OPE's list of participating institutions for the 1997-98 academic year.

students for these occupations.[7] On average, vocational schools offered more occupational programs than did comprehensive schools; for example, 44 percent of vocational schools compared with 9 percent of comprehensive schools offered more than 10 programs for the listed occupations. Since comprehensive schools offer fewer programs than do vocational schools, it is easier for comprehensive schools to possess any given characteristic in "all of their programs." For this reason, comparisons between vocational and comprehensive schools are limited to the percentages that meet the various criteria for "at least one of their programs."

Ninety percent of less-than-4-year postsecondary institutions offered at least one program for the selected occupations (table 2 and figure 1). About half of the institutions offered 1 to 5 programs, another 11 percent offered 6 to 10 programs, and an additional 27 percent offered more than 10 programs. Two-year institutions offered considerably more programs than less-than-2-year institutions; for example, 43 percent of 2-year institutions compared with 5 percent of less-than-2-year institutions offered more than 10 programs that prepared students for the listed occupations.

Organization of the Report

This report contains 29 tables: 2 tables (1 and 2) presenting data for both surveys; 17 tables (3 to 19) for the FRSS secondary school survey; and 10 tables (20 to 29) for the PEQIS postsecondary institution survey. The section immediately following this introduction provides selected highlights from the tables. The following section presents the tables. After the tables, the reader will find the appendices, consisting of a methodology section (appendix A), references (appendix B), and copies of the survey instruments (appendix C).

Presentation of the Data

This report presents three types of numbers: counts (of schools or institutions), percentages (of schools or institutions), and standard errors of all estimated counts and percentages. Every table except table 1 is presented as part of a pair, with each part on a facing page. On the left-hand-side pages, the reader will find tables of counts and percentages listed for certain program or sample characteristics; on the facing right-hand-side pages are tables of the standard errors associated with those counts and percentages.

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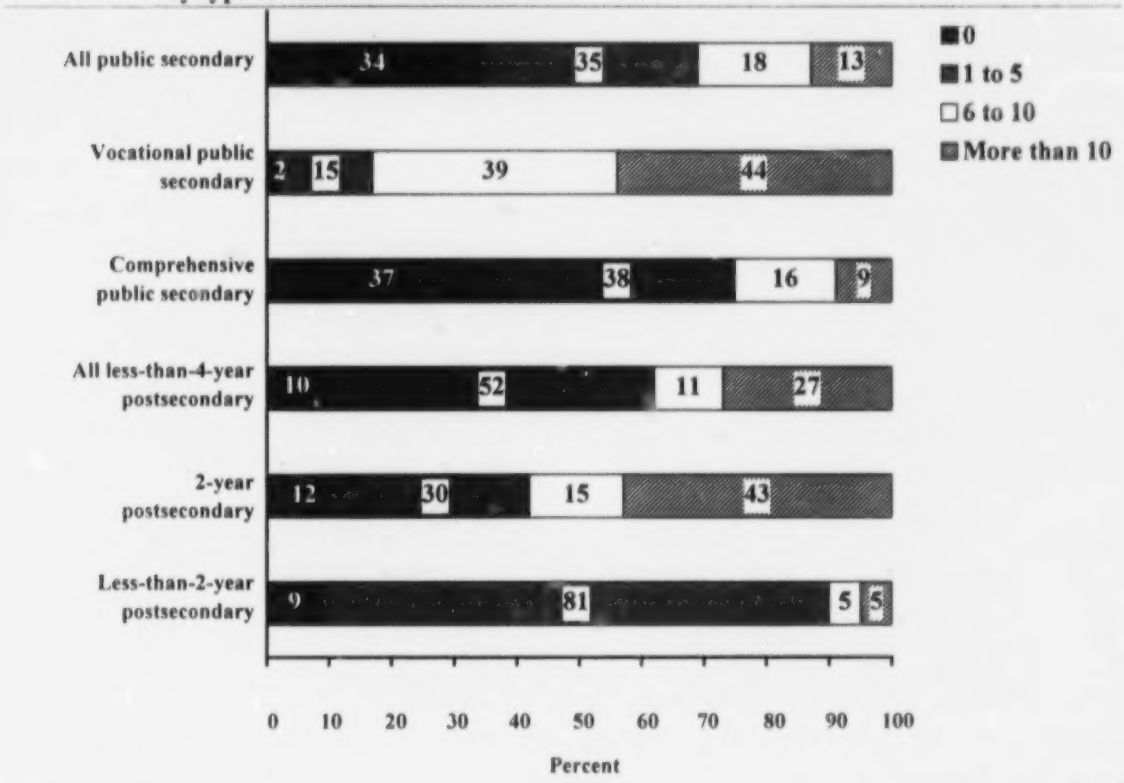
[7] One reason for this finding is that respondents were asked to identify which occupational programs they had from among those on a selective list, some of these schools may have offered occupational programs that were not among those listed. Another possible reason for this finding is that the definition of vocational programs used in the survey excluded lower level vocational programs that typically do not prepare students for entry-level jobs. For example, it excluded career exploration and other introductory courses that prepare students for adult life or work in general (e.g., industrial arts). Finally, some of the comprehensive high schools might be sending their students to area vocational schools for technical education.

Figure 1.—Percentage distribution of public secondary schools and less-than-4-year postsecondary institutions that offer various numbers of occupational programs, by type of school or institution: 1999



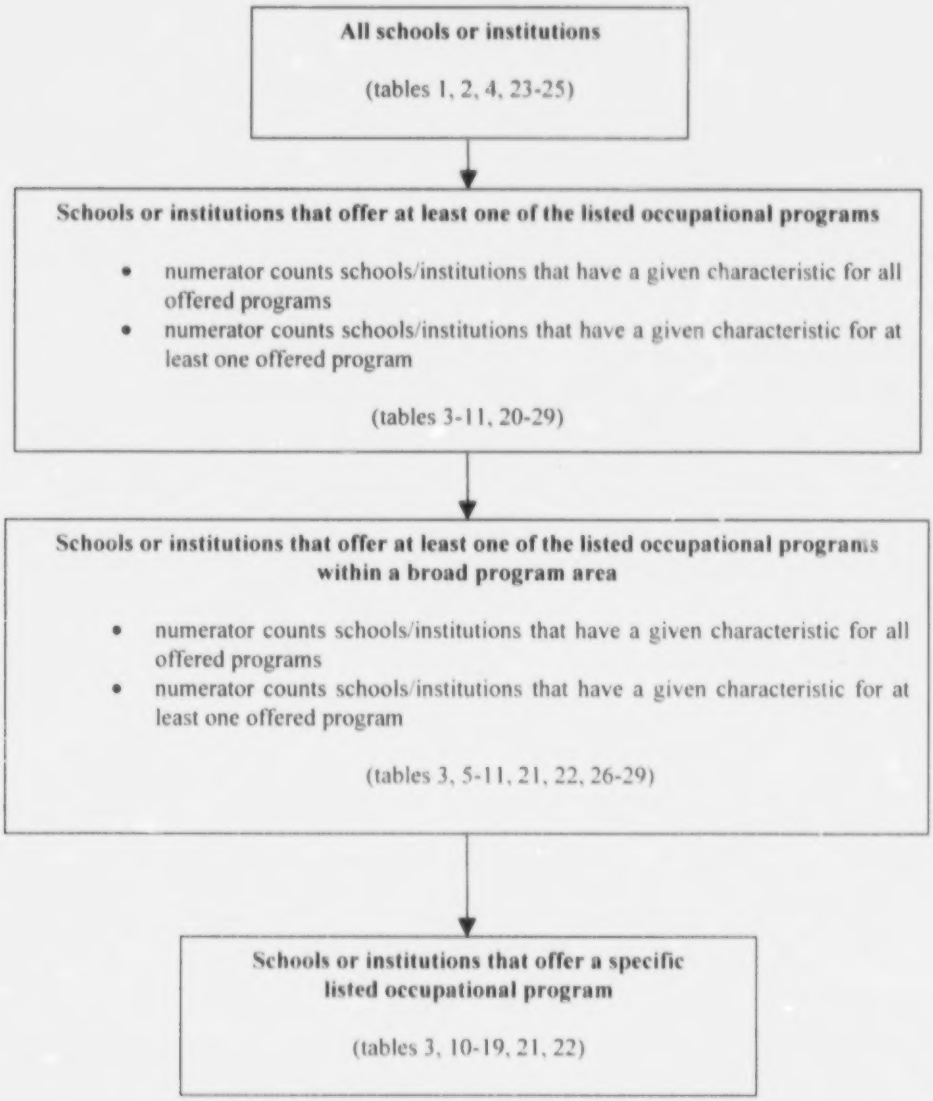
NOTE: Estimates are based on public secondary schools with 11th and 12th grades and on 2-year and less-than-2-year postsecondary institutions with Title IV eligibility.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999; Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Education Institutions, 1999. See also table 2.

Percentages are calculated for four different groups of secondary schools and postsecondary institutions (see figure 2). The largest group is the entire sample of responding schools (for the FRSS survey) or institutions (for the PEQIS survey). Only a few tables in this report—tables 1, 2, 4, and 23-25—use this group as a base. These tables present statistics that describe the total population of schools or institutions, including schools and institutions that offer none of the occupational programs listed in the survey instruments.

The next largest group includes all the schools from the FRSS survey, or institutions from the PEQIS survey, that offered at least one of the listed occupational programs. (As mentioned above, this group includes 66 percent of secondary schools and 90 percent of less-than-4-year postsecondary institutions.) A common type of percentage calculated on this base divides the number of schools or

Figure 2.—Percentage bases used to examine different groups of public secondary schools and less-than-4-year postsecondary institutions


All schools or institutions
(tables 1, 2, 4, 23-25)
Schools or institutions that offer at least one of the listed occupational programs
• numerator counts schools/institutions that have a given characteristic for all offered programs
• numerator counts schools/institutions that have a given characteristic for at least one offered program
(tables 3-11, 20-29)
Schools or institutions that offer at least one of the listed occupational programs within a broad program area
• numerator counts schools/institutions that have a given characteristic for all offered programs
• numerator counts schools/institutions that have a given characteristic for at least one offered program
(tables 3, 5-11, 21, 22, 26-29)
Schools or institutions that offer a specific listed occupational program
(tables 3, 10-19, 21, 22)

institutions that possessed a certain program characteristic in *all* of their occupational programs by the number of schools or institutions with at least one occupational program. Another type of percentage divides the number of schools or institutions that possessed a certain program characteristic in *at least one* of their occupational programs by the number of schools or institutions with at least one occupational program. However, the large differences in the number of programs offered by comprehensive versus vocational secondary schools and by 2-year versus less-than-2-year institutions may skew the results for analyses that determine the percentage of schools that possess a certain characteristic in "all of their programs." So comparisons between comprehensive and vocational secondary schools and between 2-year and less-than-2-year institutions focus on the percentages that meet various criteria for "at least one of their programs." (This base is used in at least part of each of tables 3-11 and 20-29.)

The third, and next largest, group includes all the schools or institutions that had at least one occupational program within a broad program area (i.e., business and marketing, technical, mechanical, building trades, health/life sciences, or service occupations). A common type of percentage calculated on this base divides the number of schools or institutions that possessed a certain program characteristic in *all* of their occupational programs in a broad program area by the number of schools or institutions with at least one occupational program in that broad program area. Another type divides the number of schools or institutions that possessed a certain program characteristic in *at least one* of their occupational programs in a broad program area by the number of schools or institutions with at least one occupational program in the broad program area. (This base is used in at least part of each of tables 3, 5-11, 21, 22, and 26-29.)

The last and smallest group includes only those schools or institutions that have a program for a specific occupation (e.g., accountant/bookkeeper). The percentage calculated using this base divides the number of schools or institutions that possess a certain program characteristic for that specific occupational program by the number of schools or institutions with that specific occupational program. (This base is used in tables 3, 10-19, 21, and 22.)

The number of schools or institutions contained in the second, third, and fourth groups can be located in table 3 (for secondary schools) and table 20 (for postsecondary institutions). The top line lists the number of schools or institutions with at least one occupational program, which is then broken out into vocational and comprehensive categories for FRSS and 2-year and less-than-2-year categories for PEQIS. Below the top line are six rows representing the number of schools or institutions with at least one occupational program in each of the listed broad program areas. These numbers are then broken out into vocational and comprehensive categories for FRSS, and 2-year and less-than-2-year categories for PEQIS, in their respective columns to the right. Below the broad program area section are 28 rows of numbers, in the case of FRSS, and 32 rows of numbers, in the case of PEQIS. These numbers represent the number of

schools or institutions with the occupational program indicated for the row. These numbers are then broken out into vocational and comprehensive categories for FRSS, and 2-year and less-than-2-year categories for PEQIS, in their respective columns to the right. Similar data for the *percentage* of schools or institutions in each group are listed in table 4 (for secondary schools) and table 23 (for postsecondary institutions).

SELECTED FINDINGS

This report examines survey data on occupational program activities at the public secondary and less-than-4-year postsecondary education levels. Most findings are based on schools and institutions that offered at least one occupational program that prepared students for the occupations listed in the surveys.

Program Offerings Across Secondary Schools

In 1999, 66 percent of all public secondary schools, or over 11,000 such schools, offered at least one of the listed occupational education programs (tables 3 and 4). The distribution of offerings largely follows the distribution of schools: 89 percent of all public secondary schools are comprehensive high schools, and 84 percent of the schools that offer at least one of the listed occupational programs are comprehensive high schools (figure 3). Likewise, 11 percent of all public secondary schools are vocational schools, and 16 percent of the schools that offer at least one of the listed programs are vocational schools.

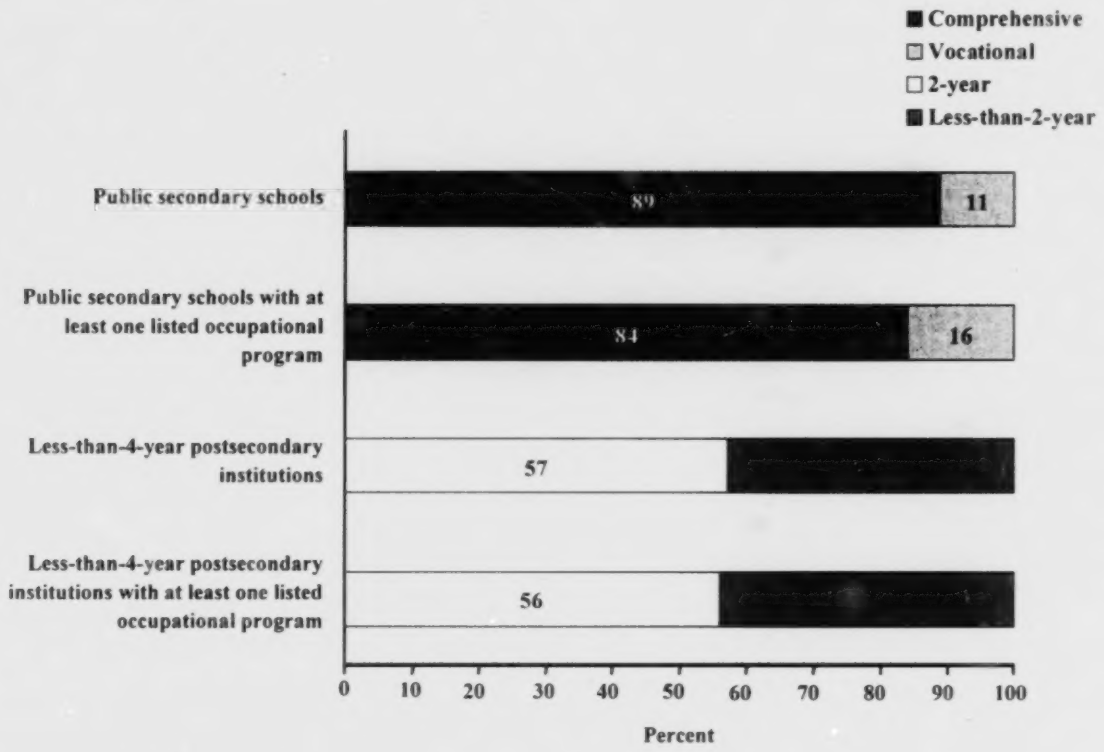
Among all public secondary schools that offered at least one occupational program in 1999, some broad program areas and some specific programs were more popular than others. A majority of these schools offered at least one program in two broad program areas—business and marketing (85 percent) and technical occupations (60 percent). About half of the schools offered at least one program in each of the other broad program areas—mechanical occupations, the building trades, health/life sciences, and service occupations (table 4). Within each broad program area, vocational schools make up from 15 percent to 27 percent of the public secondary schools that offer at least one program in that area (figure 4). Other findings follow:

- Several specific occupational programs were offered at over 4,000 schools in 1999. These include accountant/bookkeeper (7,783), administrative assistant/secretary (6,019), drafter or CADD operator (5,344), and carpenter (4,703)[7] (table 3).
- The following specific occupational programs were offered at fewer than 1,000 schools in 1999: medical/life sciences lab technician (718); AC/heating/refrigeration repair technician (709); engineering technician (466); and paralegal/legal assistant (313)[8] (table 3).

[7] Only occupational programs offered in a number of schools that was statistically significantly greater than 4,000 are included in this list.

[8] Only occupational programs offered in a number of schools that was statistically significantly less than 1,000 are included in this list.

Figure 3.—Percentage distribution of types of public secondary schools and types of less-than-4-year postsecondary institutions, overall and among schools and institutions offering at least one listed occupational program: 1999



NOTE: Estimates are based on public secondary schools with 11th and 12th grades and on 2-year and less-than-2-year postsecondary institutions with Title IV eligibility.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999; Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Education Institutions, 1999. See also tables 1 and 3.

- At the specific program level, vocational schools have a relatively large share of the market for some offerings. Despite vocational schools' lower number overall, the majority (58 percent) of secondary schools that offer occupational programs in AC/heating/refrigeration repair are vocational schools, and about half of the schools that offer programs in cosmetology (49 percent) and plumbing (46 percent) are vocational schools (table 3).

- There are more comprehensive schools than vocational schools in the United States, and most public secondary schools offering at least one of the listed occupational programs were comprehensive schools. The distribution of these schools by type varied by broad program area, however, ranging from vocational schools representing 15 percent of the schools offering at least one business and marketing occupational program to 27 percent of the schools offering at least one mechanical occupations program (figure 4).

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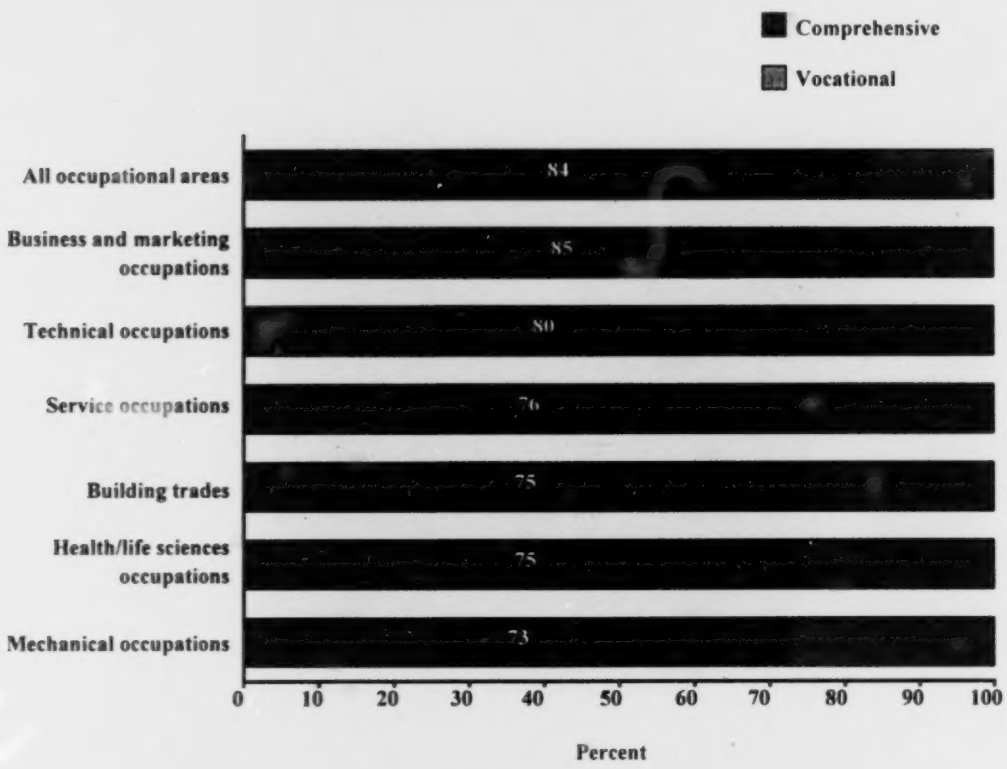
Figure 4.—Percentage distribution of types of public secondary schools that offer at least one listed occupational program, for all program areas, and in each broad program area: 1999



NOTE: Data presented in "All occupational areas" bar represent the distribution for all public secondary schools that offer one or more occupational programs. Data presented in each of the other bars are based on the number of public secondary schools that offer one or more of the listed occupational programs in that broad program area. Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999. See also table 3.

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Program Offerings Within Each Type of Secondary School

As one might expect, vocational schools were more likely than comprehensive schools to offer the listed occupational programs; 98 percent of vocational schools offered at least one of the listed programs, compared to 63 percent of comprehensive schools. In addition, most comprehensive schools offered either no occupational programs or just a few programs (75 percent offered up to 5 programs); they tend to limit their vocational curriculum (figure 1). Vocational schools, by contrast, tend to offer a wider range of occupational programs. Seventeen percent of public vocational schools offered up to 5 occupational programs, whereas 83 percent offered 6 or more programs.

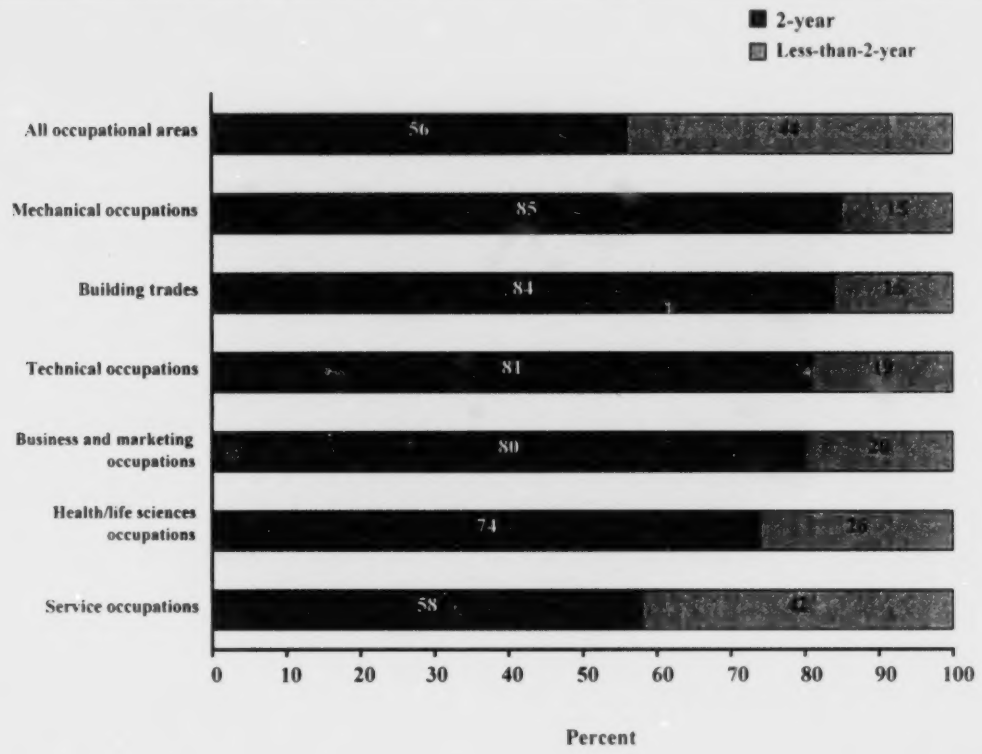
One result of the disparity in the number of offerings between comprehensive and vocational schools is that with few exceptions (as noted below), specific occupational programs are more common among vocational schools than among comprehensive schools.

- Most occupational programs were offered by comprehensive schools, simply because there were so many more comprehensive schools (table 3). Any given vocational school, however, was more likely than a comprehensive school to offer occupational programs in each of the six broad program areas (table 4).
- Vocational schools were also more likely than comprehensive high schools to offer a program in each specific program area, with the exception of accounting/bookkeeping, which was offered equally often by comprehensive (52 percent) and vocational schools (46 percent) (table 4).
- Among schools that offered at least one vocational program, some occupational programs commonly found in vocational schools were relatively rare among comprehensive schools, for example, plumber (80 versus 7 percent), electrician (49 versus 14 percent), auto body repair (46 versus 10 percent), computer/electronics technician (44 versus 17 percent), and cosmetologist (42 versus 9 percent) (table 4).

Program Offerings Across Postsecondary Institutions

In 1999, 90 percent of all less-than-4-year postsecondary institutions, or 3,277 institutions, offered at least one of the listed occupational programs (tables 2 and 20). The distribution of offerings follows the distribution of schools: 57 percent of all less-than-4-year institutions are 2-year institutions, and 56 percent of the institutions that offer at least one of the listed occupational programs are 2-year institutions (tables 1 and 20). Likewise, 43 percent of all less-than-4-year institutions are less-than-2-year institutions, and 44 percent of the institutions that offer at least one of the listed programs are less-than-2-year institutions (figures 3 and 5).

Figure 5.—Percentage distribution of types of less-than-4-year postsecondary institutions that offer at least one listed occupational program, for all program areas, and in each broad program area: 1999



NOTE: Data presented in "All occupational areas" bar represent the distribution for all less-than 4-year postsecondary institutions that offer one or more of the listed occupational programs. Data presented in each of the other bars are based on the number of less-than-4-year postsecondary institutions that offer one or more of the listed occupational programs in that broad program area. Estimates are based on 2-year and less-than-2-year postsecondary institutions with Title IV eligibility.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Education Institutions, 1999. See also table 20.

Among less-than-4-year postsecondary institutions that offered at least one occupational program in 1999, some broad program areas and some specific programs were more popular than others. A majority of these institutions offered at least one program in three broad program areas—services (64 percent), health/life sciences (61 percent), and business and marketing (60 percent). About half of these institutions offered programs for technical occupations (53 percent). Fewer than half of these institutions offered at least one program in two other broad program areas—mechanical occupations (33 percent), and the building trades (30 percent) (table 23). Other findings include:

- Several specific occupational programs were offered at over 1,000 institutions in 1999, including administrative assistant/secretary (1,749); accountant/bookkeeper (1,608);

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computer technician (1,200); cosmetologist (1,141); and medical or dental assistant (1,095)[9] (table 20).

- The following specific occupational programs were offered at fewer than 300 institutions in 1999: bricklayer/mason (191); agriscience technician (126); and veterinary assistant (89)[10] (table 20).

- The prevalence of offerings at 2-year (rather than less-than-2-year) institutions increases at the level of specific occupational programs. In general, 2-year institutions account for 80 to 90 percent of the institutions that offer a specific occupational program. Cosmetology was the only occupational program more likely to be offered by a less-than-2-year institution than by a 2-year institution (69 percent versus 31 percent, respectively) (table 20).

Program Offerings Within Each Type of Postsecondary Institution

A similar percentage of 2-year and less-than-2-year institutions offered at least one listed occupational program; 91 percent of less-than-2-year institutions offered at least one of the listed programs, compared to 88 percent of 2-year institutions (table 23). However, on average, 2-year institutions offered a greater number of occupational programs. Most less-than-2-year institutions focus on one or a few occupational fields; they tend to specialize their curriculum. Two-year institutions, in contrast, tend to be larger institutions that offer a broader selection of programs; they are more likely to generalize their curriculum. As shown in figure 1, 58 percent of 2-year institutions offered more than five specific occupational programs, compared to 10 percent of less-than-2-year institutions. One result of this disparity in the number of offerings is that with one exception (cosmetology), specific occupational programs are more common among 2-year institutions than among less-than-2-year institutions. Other findings include:

- Two-year institutions were more likely than less-than-2-year institutions to offer a program in five of the six broad program areas; less-than-2-year institutions were as likely as 2-year institutions to offer a program in service occupations (which includes cosmetology) (table 23).

- The likelihood of offering a program differs even among those institutions that offer programs. Among the 90 percent of less-than-4-year institutions that offered at least one occupational program, 2-year institutions were more likely than less-than-2-year institutions to offer a program in each specific program area. The sole exception was cosmetology, which was offered by 54 percent of less-than-2-year institutions that offered at least one program but only 20 percent of comparable 2-year institutions (table 23).

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[9] Only occupational programs offered in a number of institutions that was statistically significantly greater than 1,000 are included in this list.

[10] Only occupational programs offered in a number of institutions that was statistically significantly less than 300 are included in this list.

- Among institutions that offered at least one occupational program, many programs commonly found in 2-year institutions were relatively rare among less-than-2-year institutions, for example, electronics technician (50 versus 8 percent), computer programmer (48 versus 6 percent), childcare worker (42 versus 4 percent), and emergency medical technician (38 versus 5 percent) (table 23).

The PEQIS survey asked respondents at less-than-4-year institutions to identify which occupational programs they offered for academic credit and which they offered through noncredit courses.

- Overall, 71 percent of less-than-4-year institutions offered at least one of the listed occupational programs on a for-credit basis, and 41 percent offered at least one program on a noncredit basis. More specifically, 49 percent of these institutions offered one or more programs *only* on a for-credit basis; 19 percent offered one or more programs *only* on a noncredit basis; and 22 percent offered programs on both a for-credit and noncredit basis (not in a table). (The remaining 10 percent offered none of the listed programs.) (tables 23 to 25).

- Nearly all 2-year institutions with occupational programs (97 percent) offered at least one program on a for-credit basis. Fewer less-than-2-year institutions with occupational programs (57 percent) offered at least one program on a for-credit basis (table 25 and figure 6).

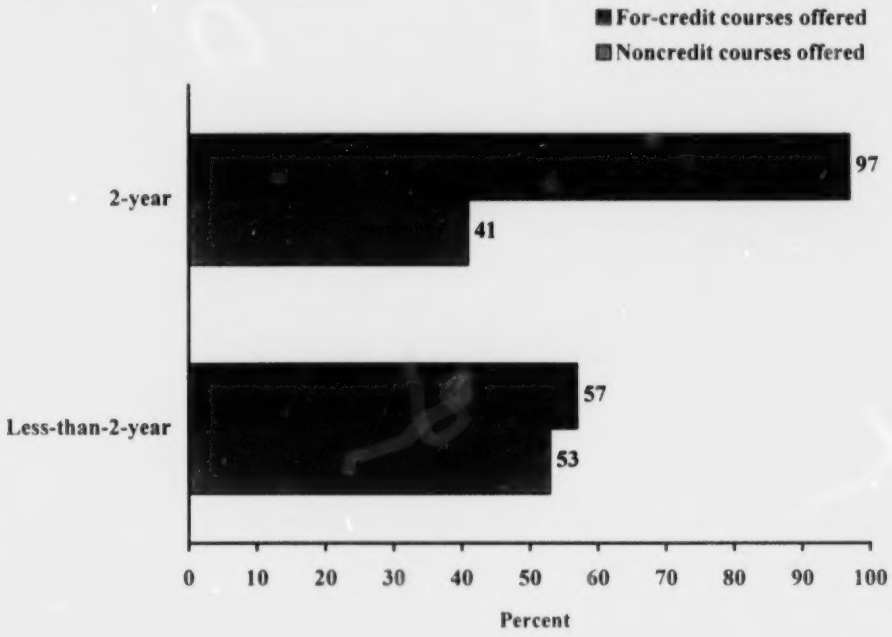
- By contrast, less-than-2-year institutions were more likely to offer at least one non-credit course. Fifty-three percent of less-than-2-year institutions with occupational programs offered at least one occupational program as a noncredit course, while 41 percent of 2-year institutions did the same (table 24 and figure 6).

- Less-than-2-year institutions were a minority of the postsecondary institutions offering noncredit programs in 5 of the 6 broad program areas; they were a majority of those offering noncredit programs in service occupations, largely because of the relative prevalence of noncredit cosmetology programs (table 21).

Procedures Used to Ensure That Courses Teach Relevant Job Skills

Educators responsible for occupationally specific courses typically attempt to ensure that the content of their courses relates well to the occupations for which they prepare their students. Various procedures exist for ensuring a match between course content and occupational skill requirements, five of which were included in the surveys. For public secondary schools, the five listed procedures were industry advisory committees, surveys of employers' skill needs, followup surveys of graduates, student work experience (e.g., internships), and faculty externships (work experience). Multiple responses were allowed to this survey item. Specific findings include:

Figure 6.—Percent of less-than-4-year postsecondary institutions that offer at least one listed occupational program that also offer noncredit courses and for-credit courses in at least one program, by type of institution: 1999



NOTE: Estimates are based on 2-year and less-than-2-year postsecondary institutions with Title IV eligibility.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Education Institutions, 1999. See also tables 24 and 25.

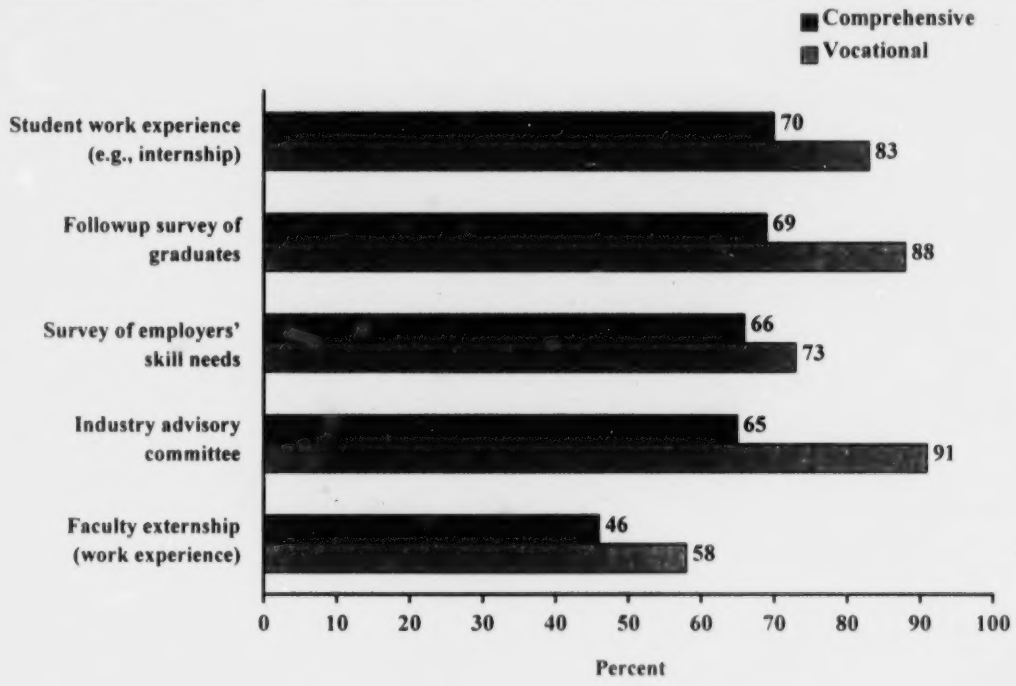
- Each of four of these procedures—industry advisory committees, surveys of employers' skill needs, surveys of student graduates, and student work experience—was used by at least two-thirds of all public secondary schools with occupational programs. Almost half of these schools used faculty externships to ensure that courses teach appropriate job skills (table 5).

- Faculty externships were often the least frequently used procedure across broad program areas and types of institution (table 5).

- Among schools with occupational programs, vocational schools were more likely than comprehensive schools to use four of the five procedures (all except surveys of employers' skill needs, where the difference was not statistically significant) for at least one of their occupational programs (table 5 and figure 7).

For less-than-4-year postsecondary institutions, five procedures were listed in the survey: industry advisory committees; surveys of employers' skill needs; followup surveys of graduates; mechanisms for faculty to get recent work experience; and periodic internal reviews. Again, multiple responses were allowed to this survey item. Specific findings include:

Figure 7.—Percent of public secondary schools offering at least one listed occupational program that report using each of five procedures to ensure they teach jobs skills in at least one program, by school type: 1999



NOTE: Data are presented for public secondary schools that offer one or more of the listed occupational programs. Estimates are based on public secondary schools with 11th and 12th grades.

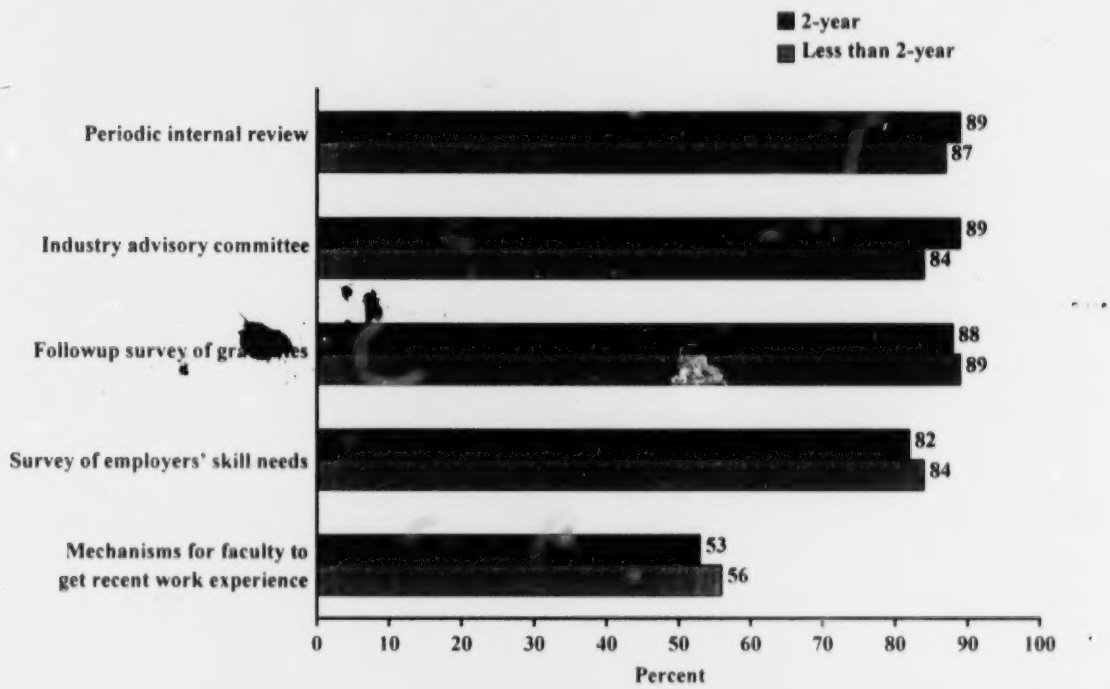
SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999. See also table 5.

- Each of four of these procedures—industry advisory committees, surveys of employers' skill needs, surveys of student graduates, and periodic internal reviews—was used by about four-fifths of less-than-4-year postsecondary institutions with occupational programs in at least one of their programs. About half of these institutions used mechanisms for faculty to get recent work experience (table 26).

- Mechanisms for faculty to get recent work experience tended to be the least frequently used procedure across broad program areas and types of institution (table 26).

- Less-than-2-year institutions with occupational programs were as likely as 2-year institutions to use each of the five procedures for at least one of their occupational programs (table 26 and figure 8).

Figure 8.—Percent of less-than-4-year postsecondary institutions offering at least one listed occupational program that use each of five procedures to ensure they teach jobs skills, by type of institution: 1999



NOTE: Data are presented for less-than-4-year postsecondary institutions that offer one or more of the listed occupational programs. Estimates are based on 2-year and less-than-2-year postsecondary institutions with Title IV eligibility.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Education Institutions, 1999. See also table 26.

Use of Skill Competencies

To provide a description of the use of skill competencies in occupational programs, respondents in both surveys were asked whether skill competency lists had been developed or adopted for programs that prepared students for each occupation listed in the surveys.

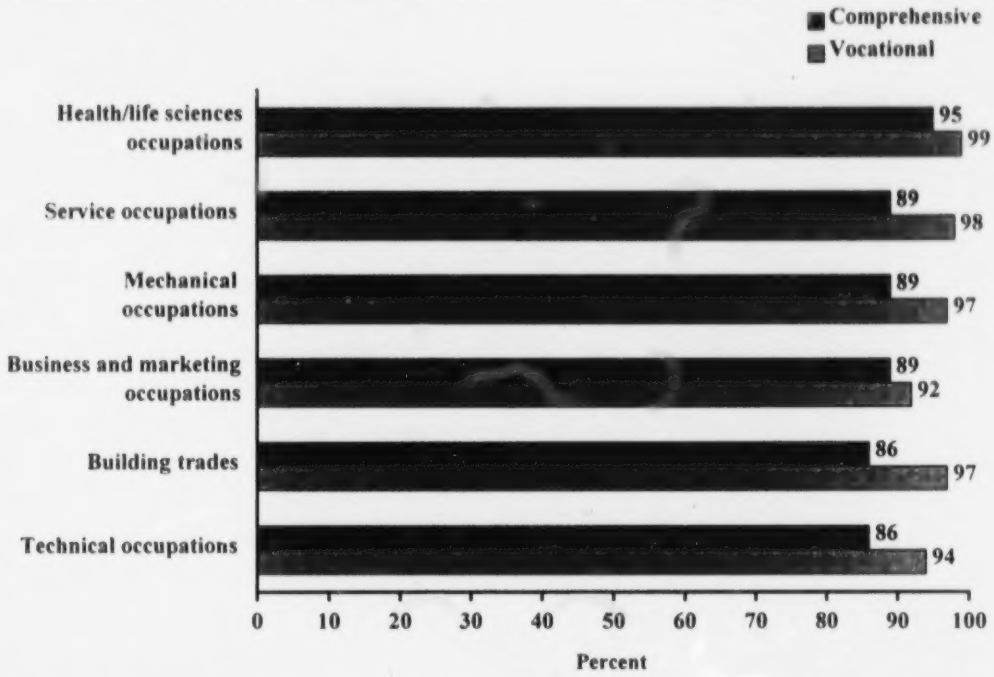
Most secondary schools with one or more of the listed occupational programs had developed or adopted skill competency lists for their programs. Specific findings include:

- In 1999, 78 percent of public secondary schools that offered at least one listed program had developed or adopted skill competencies for all of their programs and 95 percent had developed or adopted skill competencies for at least one program (table 6).

- A large majority of the schools had skill competency lists for programs within each of the six occupation areas. For example, 85 percent had competencies for all of the programs offered for business and marketing occupations, and 89 percent used competencies for at least one business and marketing program (table 6).

- Vocational schools were slightly more likely than comprehensive schools (99 versus 94 percent) to use a skill competency list for *at least one* of their listed occupational programs. This was true for occupational programs overall and for those in five of the six broad program areas (all except business and marketing) (table 6 and figure 9).

Figure 9.—Percent of public secondary schools offering at least one listed occupational program in each broad program area that use a skill competency list in at least one program in that area, by school type: 1999



NOTE: Data are presented for public secondary schools that offer one or more of the listed occupational programs in that broad program area. Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999. See also table 6.

As with secondary schools, a large proportion of 2-year and less-than-2-year postsecondary institutions that offered one or more of the relevant occupational programs reported that skill competency lists had been developed or adopted for their programs. Specific findings include:

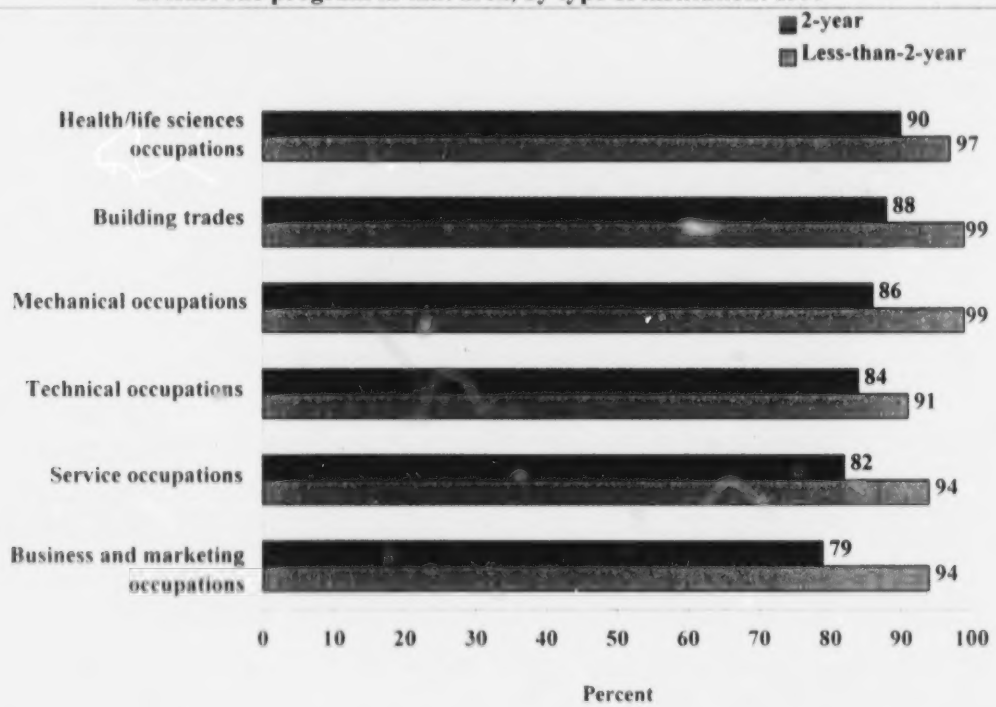
- In 1999, 77 percent of less-than-4-year institutions that offered at least one listed program had developed or adopted skill competencies for all of their programs and 93

percent had developed or adopted skill competencies for at least one program (table 27).

- A majority of the institutions had skill competency lists for programs within each of the six occupation areas. For example, 75 percent had competencies for all of their business and marketing programs, and 82 percent used competencies for at least one business and marketing program (table 27).

- There was no significant difference between 2-year and less-than-2-year institutions' use of skill competencies for *at least one* occupational program (92 compared with 96 percent). However, within each broad program area, less-than-2-year institutions were more likely than 2-year institutions to use a skill competency list for at least one of their occupational programs (table 27 and figure 10).

Figure 10.—Percent of less-than-4-year postsecondary institutions offering at least one listed occupational program in each broad program area that use a skill competency list in at least one program in that area, by type of institution: 1999



NOTE: Data are presented for less-than-4-year postsecondary institutions that offer one or more of the listed occupational programs in that broad program area. Estimates are based on 2-year and less-than-2-year postsecondary institutions with Title IV eligibility.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Education Institutions, 1999. See also table 27.

Educator and Industry Involvement in Skill Competency Development

Schools and postsecondary institutions were asked to indicate the extent of educator and industry involvement in skill competency development—that is, whether the skill competency lists were developed or adopted exclusively by individual course instructors or group(s) of educators, primarily by educators with industry input, with about equal educator and industry input, or primarily or exclusively by industry.

Skill competency lists for at least one program were developed or adopted exclusively by educators, without industry input, in about one-third (32 percent) of all public secondary schools that offered at least one listed occupational program. About half of these schools (54 percent) reported *a minor level of industry input* in developing or adopting skill competency lists for at least one of their programs. Fewer schools indicated that industry was *equally involved* in the procedure (34 percent), and fewer still reported *primary or exclusive industry input* in skill competency development (6 percent) (table 7). Other specific findings include:

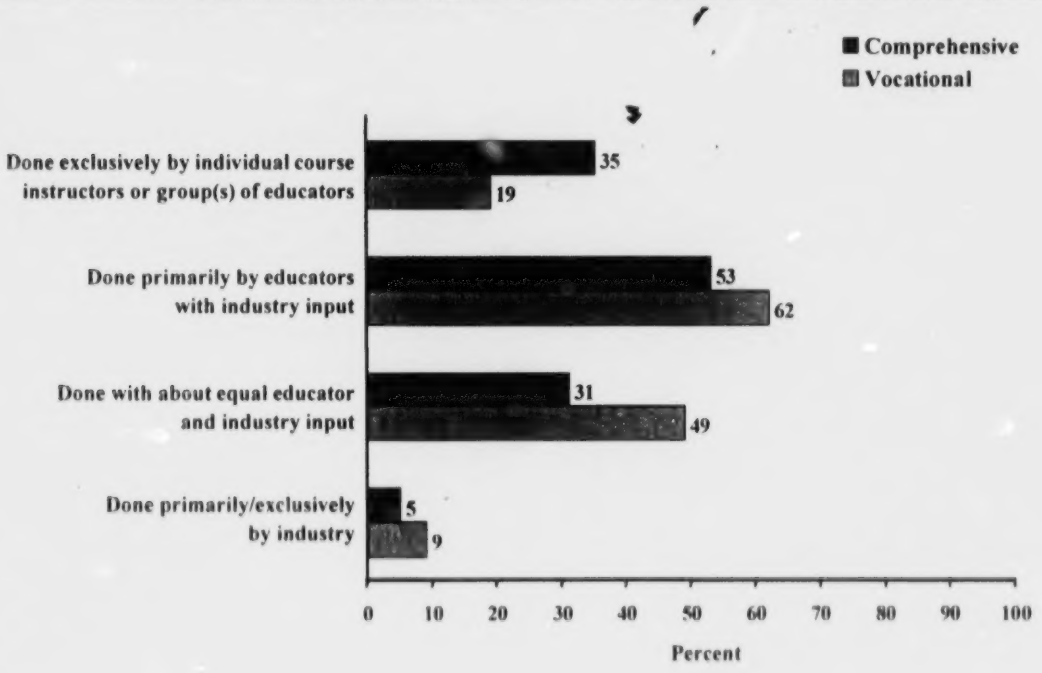
- Involvement "primarily by educators with industry input" was the most common strategy for the development or adoption of skill competency lists. This strategy was used by 54 percent of public secondary schools that offered at least one listed occupational program for least one of their skill competency lists (table 7).

- Vocational schools were more likely than comprehensive schools to involve industry in the development or adoption of skill competency lists. Vocational schools were more likely than comprehensive schools to report that developing or adopting skill competency lists for at least one of their occupational programs was done primarily by educators with industry input (62 versus 53 percent), or that it was done with about equal educator or industry input (49 versus 31 percent). Comprehensive schools, on the other hand, were more likely than vocational schools to develop or adopt skill competency lists exclusively by educators (35 versus 19 percent) (table 7 and figure 11).

- The use of skill competencies developed or adopted primarily by industry was relatively uncommon in both types of schools. Only 5 percent of comprehensive schools and 9 percent of vocational schools reported using this type of competency list for at least one of their occupational programs (table 7 and figure 11).

Industry seemed to have a comparable level of involvement in skill competency lists at the postsecondary level. Eight percent of less-than-4-year institutions with at least one of the listed programs involved industry primarily or exclusively (versus 6 percent at the secondary level), 36 percent involved educators and industry equally (versus 34 percent at the secondary level), and 44 percent used primarily educators with industry input (versus 54 percent at the secondary level) (tables 28 and 7). Other findings include:

Figure 11.—Percent of public secondary schools offering at least one listed occupational program that report different levels of involvement by educators and industry in developing or adopting skill competency lists for at least one program, by school type: 1999



NOTE: Data are presented for public secondary schools that offer one or more of the listed occupational programs. Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999. See also table 7.

- Involvement "primarily by educators with industry input" was the most common strategy for the development or adoption of skill competency lists. Forty-four percent of less-than-4-year postsecondary institutions offering at least one listed program had at least one list developed primarily by educators with industry input (table 28).

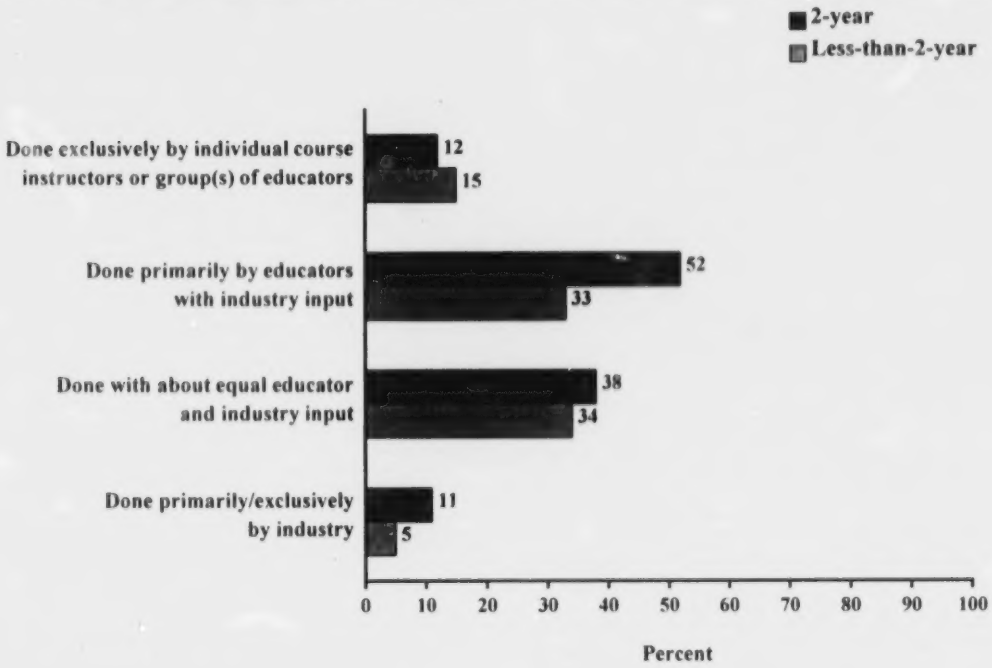
- It was most common for institutions to have their skill competency lists developed or adopted primarily by educators with industry input. For at least one program in each of the broad program areas, about half of the institutions (ranging from 42 to 51 percent) used this strategy. Development of competency lists with industry's primary or exclusive involvement was least common, ranging from 1 percent of institutions for the business and marketing program area to 12 percent for the building trades (table 28).

- Two-year institutions with occupational programs were more likely than their less-than-2-year counterparts to involve industry in the development or adoption of skill competency lists. For at least one program, 11 percent of 2-year institutions involved industry exclusively, versus 5 percent for less-than-2-year institutions; 38 percent of 2-

year institutions involved industry and educators equally, versus 34 percent for less-than-2-year institutions; and 52 percent primarily used educators with industry input, versus 33 percent for less-than-2-year institutions (table 28 and figure 12).

- The development or adoption of skill competencies primarily or exclusively by industry was relatively uncommon in both types of institutions. As noted above, among institutions that offered at least one occupational program, only 11 percent of 2-year institutions and 5 percent of less-than-2-year institutions reported using this method for at least one of their occupational programs (table 28 and figure 12).

Figure 12.—Percent of less-than-4-year postsecondary institutions offering at least one listed occupational program that report different levels of involvement by educators and industry in developing or adopting skill competency lists for at least one program, by type of institution: 1999



NOTE: Data are presented for less-than-4-year postsecondary institutions that offer one or more of the listed occupational programs. Estimates are based on 2-year and less-than-2-year postsecondary institutions with Title IV eligibility.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Education Institutions, 1999. See also table 28.

Criteria Used to Determine if a Student is a Program Completer

Traditionally, secondary schools have not formally designated students as "vocational," "technical," or "occupational" students. This type of labeling can be viewed as a form of tracking, which

is in turn viewed by some educators and researchers as an inequitable process for sorting students (e.g., Oakes 1985). The 1998 Perkins Act, however, encourages schools to develop coherent vocational programs and to identify the students who participate in these programs. State and local efforts to improve vocational education, such as efforts that encourage or require students to select a career pathway or career major, also can lead to the development of criteria for determining whether students complete occupational programs. As a result of these various pressures, some schools have developed criteria for determining whether a student has completed an occupational program—that is, whether a student is a "vocational program completer."

The FRSS survey instrument asked secondary schools what criteria, if any, they used to determine whether a student is a "vocational program completer." The criteria include end of program exam (not a course or graduation exam); passage of specific vocational courses; minimum grade point average in program; and passage of specific academic courses other than graduation requirements. Findings include:

- In 1999, the majority of public secondary schools with listed occupational programs used some criteria to determine whether a student was a program completer in at least one of their occupational programs (89 percent) and in all of their programs (77 percent) (table 8).
- Eighty to 88 percent of public secondary schools with listed occupational programs used some criteria to determine whether a student was a program completer in all of their programs within each of the six broad occupational program areas (table 8).
- The most commonly used vocational completer criterion was the passage of specific vocational courses; 75 percent of public secondary schools with at least one of the listed occupational programs used this criterion, while only 17 to 30 percent used each of the remaining criteria in at least one of their occupational programs (table 9).
- Vocational schools were more likely than comprehensive schools to use criteria to determine whether a student was a program completer. Ninety-eight percent of vocational schools had such criteria for at least one of their listed occupational programs, compared to 87 percent of comprehensive high schools. Likewise, vocational schools were more likely to use vocational completer criteria in at least one of their occupational programs within five of the six broad program areas (the exception being health/life sciences occupations) (table 8).
- Vocational schools were more likely than comprehensive schools to use the passage of specific vocational courses or a minimum program grade point average as completer criteria in at least one of their programs in most broad occupational areas (with the exceptions of health/life sciences programs for the passage of specific vocational courses, and the service programs for minimum grade point average). For example, in business and marketing programs, the passage of vocational courses was used by 84 percent of vocational schools and 67 percent of comprehensive schools, and a

minimum program grade point average was used by 34 percent of vocational schools and 20 percent of comprehensive schools (table 9).

Credentialing Mechanisms

Occupational programs are sometimes linked to a credentialing process, through which students are awarded official documentation that they have completed a program and/or passed a skills test. At the secondary level, potential credentials (other than the high school diploma) are state- or industry-awarded regulatory credentials (a registration, license, or certification) and school-awarded occupational skill certificates. The FRSS public secondary school survey asked whether programs for each occupation prepared students either for a state or industry regulatory examination or to earn an occupational skill certificate. Specific findings include:

- In 1999, seven percent of public secondary schools with listed occupational programs prepared students in *all* of their occupational programs for a state or industry regulatory exam, while 41 percent did so in at least one of their programs (table 10).
- Programs that prepared students for state or industry regulatory exams were more common in the health/life sciences (47 percent) and service (36 percent) occupational areas than they were in the business and marketing (10 percent) or technical (16 percent) occupational areas (table 10).
- More than half of the programs in nursing and in cosmetology prepared students to take state or industry regulatory exams (63 percent and 80 percent, respectively) (table 10).
- Vocational schools were more likely than comprehensive schools to prepare students for a state or industry regulatory exam in at least one of their offered occupational programs (67 versus 36 percent, respectively) (table 10).
- In 1999, 31 percent of public secondary schools with occupational programs prepared students in *all* of their occupational programs to earn an occupational skill certificate, whereas 55 percent did so in at least one of their programs (table 11).
- Within each of the six broad occupational program areas, between 43 and 56 percent of public secondary schools prepared students to earn occupational skill certificates for at least one program in the area (table 11).
- More than half of the following specific occupational programs prepared students to earn occupational skill certificates: AC/heating/refrigeration technician (72 percent), auto body repairer (69 percent), computer/electronics technician (66 percent), nurse or nurses' aide (64 percent), cosmetologist (63 percent), machinist (61 percent), and automotive mechanic/technician (59 percent) (table 11).

- Among schools with listed occupational programs, vocational schools were more likely than comprehensive schools to offer at least one program that prepared students to earn occupational skill certificates (81 versus 50 percent) (table 11).

At the postsecondary level, the PEQIS survey asked less-than-4-year postsecondary institutions whether their occupational programs prepared students to earn a range of credentials. First, the survey asked about two standard academic credentials—associate's degrees and institutional certificate/diploma. The survey also asked about regulatory credentials—state registrations, licenses, or certificates—and two types of credentials offered by industry, associations, or unions—industry/trade certificates or diplomas, and company certificates (e.g., Cisco Certified Internetwork Expert). The latter category was meant to represent the credential obtained for completion of a company's training program through a postsecondary institution. Specific findings include:

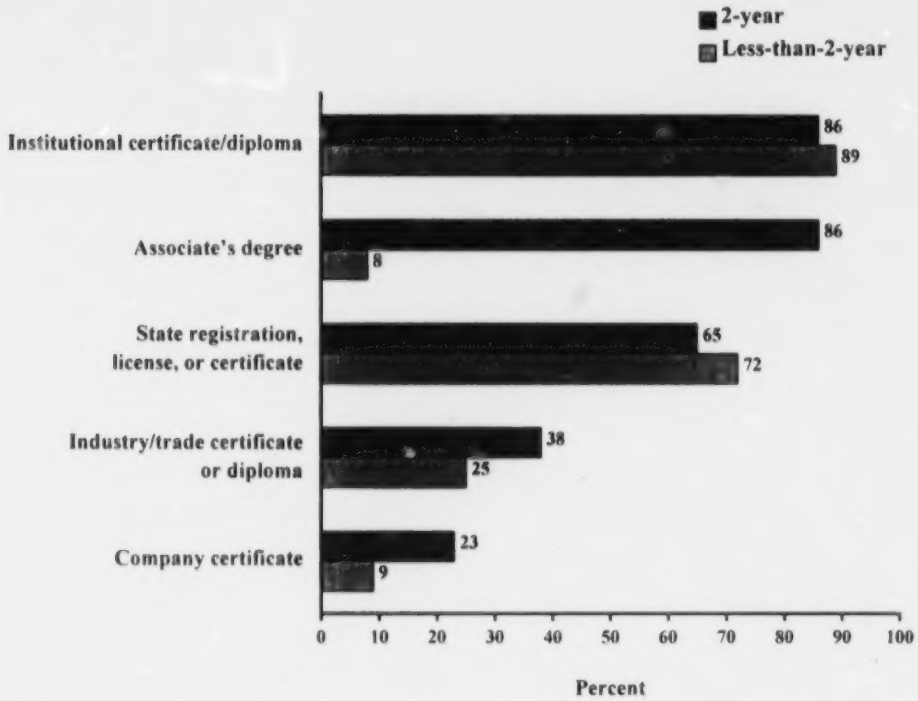
- In 1999, about half (53 percent) of less-than-4-year postsecondary institutions with listed occupational programs offered institutional certificates/diplomas in *all* of their programs, and 87 percent offered this type of credential for at least one of their programs. Next most common were associate's degrees and state-awarded regulatory credentials (registrations, licenses, or certificates), each offered by about half of these institutions for at least one of their programs. Industry/trade certificates or diplomas were available for at least one program at about one-third of these institutions, and company certificates were available at about one-fifth of these institutions (table 29).

- Postsecondary institutions were less likely to offer associate's degrees or institutional certificates/diplomas in all of their building trades programs (5 and 19 percent, respectively) than in any of the other broad program areas (24 to 59 percent for associate's degrees, and 50 to 69 percent for institutional certificates/diplomas) (table 29).

- Fewer than one-third of 2-year institutions with listed occupational programs offered any one credential in *all* of their programs. However, a large majority (84 percent) of less-than-2-year institutions with occupational programs offered institutional certificates/diplomas in all of their programs, and 56 percent offered a state registration, license, or certificate in all of their programs (table 29). (This difference between institutions may be partially due to the fact that 2-year institutions tend to offer more programs than do less-than-2-year institutions.)

- Among all less-than-4-year institutions, company certificates were the least common of the five types of credential offered. This credential is particularly infrequent at less-than-2-year institutions. Twenty-three percent of 2-year institutions offered company certificates in at least one of their occupational programs; only 9 percent of less-than-2-year institutions did so (table 29 and figure 13).

Figure 13.—Percent of less-than-4-year postsecondary institutions offering at least one occupational program that offer each type of credential for at least one program, by type of institution: 1999



NOTE: Data are presented for less-than-4-year postsecondary institutions that offer one or more of the listed occupational programs. Estimates are based on 2-year and less-than-2-year postsecondary institutions with Title IV eligibility.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Education Institutions, 1999. See also table 29.

Relationships Among Program Characteristics

Most of the tables in this report present the percentages of schools or institutions possessing a certain characteristic, such as the proportion of schools that had developed or adopted a skill competency list for their occupational programs. In tables 12 to 19, the FRSS survey data from public secondary schools are examined in a relational context. In other words, these tables represent the extent to which programs that possess one characteristic tend to also possess (or not possess) a second program characteristic—that is, the extent to which program characteristics tend to be associated with each other. For example, table 18 allows one to determine whether programs that offered vocational skill certificates were more likely than those that did not offer skill certificates to use skill competency lists. So, for example, 92 percent of accounting/bookkeeping programs that offered skill certificates used skill

competency lists, while 84 percent of accounting/bookkeeping programs that did not offer skill certificates used competency lists.

In concise form, the six program characteristics featured in tables 12 to 19 are as follows:

- Whether the program uses a skill competency list;
- Whether the program involves industry in developing or adopting skill competency lists;
- Whether the program uses any criterion to determine if a student is a program completer;
- Whether the program uses a particular criterion to determine if a student is a program completer (e.g., end of program exam, minimum grade point average in program);
- Whether the program prepares students for state or industry regulatory exam; and
- Whether the program prepares students for an occupational skill certificate.

These program characteristics indicate ways in which programs can provide quality-control mechanisms. Data from tables 12 to 19 show how these potential quality-control structures relate to each other. Do programs that have one quality-control structure tend to have others as well? Are there two types of occupational programs: those with quality-control structures and those without? Or, does one find that certain types of quality-control structures tend to be found with certain other types?

More specifically, tables 12 to 19 are organized to investigate whether programs that offered skill certificates or that used criteria to identify program completers were more or less likely to have other quality-control structures. Taking each question in turn:

Were programs that offered skill certificates more or less likely to have other quality-control structures? (see tables 13, 14, 17, and 18)

- Overall, programs that offered skill certificates were more likely than programs that did not offer skill certificates to use skill competency lists (table 18).[11]
- Programs that offered skill certificates were also more likely that those that did not offer skill certificates to involve industry in the development or adoption of their skill competency lists (table 13).

[11] Table 12 (not discussed here) shows the same relationship as does table 18.

- Programs that offered skill certificates were more likely than those that did not offer skill certificates to define vocational program completers (table 17).

- In addition, programs that offered skill certificates were more likely than those that did not offer skill certificates to define program completers based on the students' grade point average or on their vocational courses; however, programs that offered skill certificates were no more likely than those that did not offer certificates to define program completers based on their academic courses or on an end of program exam (table 14).

Were programs that used criteria to identify program completers more or less likely to have other quality-control structures? (see tables 15, 16, and 19)

- Overall, programs that identified program completers were no more likely than programs that did not identify program completers to use skill competency lists (table 15).

- However, programs that identified vocational completers were more likely than programs that did not identify completers to involve industry in the development or adoption of their skill competency lists (table 16).

- In addition, programs that identified program completers were more likely than those that did not identify completers to offer skill certificates (table 19).[12]

[12] Note that tables 17 and 19 depict the same positive relationship between programs that define program completers and programs that offer skill certificates; the tables merely show this relationship from two different perspectives.

Table 1.—Number and percent of public secondary schools and less-than-4-year postsecondary institutions responding, and the estimated number and percent of public secondary schools and less-than-4-year postsecondary institutions nationally, by type of school or institution: 1999

School/institution	Survey respondents		National population estimates	
	Number	Percent	Number	Percent
All public secondary schools*	1,078	100	16,821	100
Vocational	517	48	1,816	11
Comprehensive	561	52	15,005	89
All less-than-4-year postsecondary institutions	1,100	100	3,660	100
2-year	595	54	2,073	57
Less-than-2-year	505	46	1,587	43

*Definitions of public secondary schools as vocational and comprehensive were based on school type as reported in the questionnaire.

NOTE: Estimates are based on public secondary schools with 11th and 12th grades and on 2-year and less-than-2-year postsecondary institutions with Title IV eligibility.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999; Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Education Institutions, 1999.

Table 2.—Percent of public secondary schools and less-than-4-year postsecondary institutions, by the number of occupational programs offered and type of school or institution: 1999

School/institution	Number of occupational programs offered			
	0	1-5	6-10	More than 10
All public secondary schools[1]	34	35	18	13
Vocational[2]	2	15	39	44
Comprehensive	37	38	16	9
All less-than-4-year postsecondary institutions	10	52	11	27
2-year	12	30	15	43
Less-than-2-year	9	81	5	5

[1]Definitions of public secondary schools as vocational and comprehensive were based on school type as reported in the questionnaire.

[2]Two percent of vocational schools did not offer any program that prepared students for the occupations examined in this survey. (These were most likely vocational schools that focused their curriculum on one or a few occupational areas not included in the FRSS survey.)

NOTE: Estimates are based on public secondary schools with 11th and 12th grades and on 2-year and less-than-2-year postsecondary institutions with Title IV eligibility. For public secondary schools that offer programs, the number of programs could range from 1 to 28. For the postsecondary institutions, the programs could include credit and noncredit courses, and the number of programs could range from 1 to 32.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999; Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Education Institutions, 1999.

Table 2a.—Standard errors of the percent of public secondary schools and less-than-4-year postsecondary institutions, by the number of occupational programs offered and type of school or institution: 1999

School/institution	Number of occupational programs offered			
	0	1-5	6-10	More than 10
All public secondary schools	2.1	2.1	1.7	0.9
Vocational	0.4	3.4	4.1	3.9
Comprehensive	2.3	2.4	1.8	1.0
All less-than-4-year postsecondary institutions	1.1	1.1	0.9	0.9
2-year	1.5	1.5	1.4	1.7
Less-than-2-year	1.2	1.3	0.5	0.4

NOTE: Estimates are based on public secondary schools with 11th and 12th grades and on 2-year and less-than-2-year postsecondary institutions with Title IV eligibility. For schools that offer programs, the number of programs could range from 1 to 28. For the postsecondary institutions, the programs could include credit and noncredit courses, and the number of programs could range from 1 to 32.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999; Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Education Institutions, 1999.

Table 3.—Distribution of public secondary schools that offer at least one listed occupational program, by broad program area and specific program: 1999

Public secondary schools that offer:	All schools	Vocational		Comprehensive	
	Number	Number	Percent of schools that offer programs	Number	Percent of schools that offer programs
At least one of the listed programs	11,186	1,784	16	9,402	84
At least one of the listed program for:					
Business and marketing occupations	9,488	1,420	15	8,068	85
Technical occupations	6,711	1,364	20	5,347	80
Mechanical occupations	5,285	1,426	27	3,859	73
Building trades	6,079	1,547	25	4,532	75
Health/life sciences occupations	5,380	1,367	25	4,014	75
Service occupations	5,446	1,332	24	4,114	76
The listed program for:					
Business and marketing occupations					
Accountant/bookkeeper	7,783	943	12	6,840	88
Administrative assistant/secretary	6,019	971	16	5,048	84
Restaurant/food service manager	2,352	513	22	1,839	78
Sales associate	2,859	434	15	2,426	85
Technical occupations					
Computer programmer	1,915	519	27	1,397	73
Computer graphics designer	2,229	547	25	1,683	76
Computer/electronics technician	2,392	779	33	1,613	67
Engineering technician	466	160	34	306	66
Drafter or CADD operator	5,344	964	18	4,380	82
Mechanical occupations					
AC/heating/refrigeration repair technician	709	408	58	301	42
Auto body repairer	1,789	819	46	970	54
Automotive mechanic/technician	4,558	1,302	29	3,256	71
Machinist	1,657	681	41	976	59
Building trades					
Bricklayer or mason	1,289	461	36	828	64
Carpenter	4,703	1,334	28	3,369	72
Electrician	2,177	874	40	1,303	60
Plumber	1,136	528	46	608	54
Welder	3,913	1,180	30	2,733	70
Health/life sciences occupations					
Emergency medical technician	1,064	355	33	709	67
Medical or dental assistant	1,534	596	39	938	61
Nurse or nurses' aide	3,235	1,077	33	2,157	67
Medical/life science lab technician	718	196	27	522	73
Agriscience technician	2,283	407	18	1,876	82
Veterinary assistant	1,022	303	30	719	70
Service occupations					
Chef/cook	3,420	965	28	2,455	72
Cosmetologist	1,549	756	49	793	51
Childcare worker or teachers' aide	3,369	745	22	2,624	78
Paralegal/legal assistant	313	101	32	212	68

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 3a.—Standard errors of the distribution of public secondary schools that offer at least one listed occupational program, by broad program area and specific program: 1999

Public secondary schools that offer:	All schools	Vocational		Comprehensive	
	Number	Number	Percent of schools that offer programs	Number	Percent of schools that offer programs
At least one of the listed programs	344.4	133.1	1.1	321.9	1.1
At least one of the listed programs for:					
Business and marketing occupations	422.4	131.7	1.3	391.5	1.3
Technical occupations	307.0	102.0	1.1	244.6	1.1
Mechanical occupations	291.4	90.1	1.7	264.6	1.7
Building trades	304.6	118.7	1.9	278.6	1.9
Health/life sciences occupations	262.9	105.9	2.0	251.5	2.0
Service occupations	250.3	117.0	1.9	221.1	1.9
The listed program for:					
Business and marketing occupations					
Accountant/bookkeeper	427.2	111.6	1.4	413.4	1.4
Administrative assistant/secretary	347.2	89.0	1.4	324.5	1.4
Restaurant/food service manager	196.0	51.2	2.6	194.0	2.6
Sales associate	218.5	53.0	1.9	207.9	1.9
Technical occupations					
Computer programmer	212.3	77.4	3.1	172.7	5.5
Computer graphics designer	160.1	61.3	2.6	144.2	4.2
Computer/electronics technician	158.4	58.3	2.8	152.5	2.1
Engineering technician	108.9	34.0	8.0	95.7	3.3
Drafter or CADD operator	293.9	66.8	1.2	273.6	1.2
Mechanical occupations					
AC/heating/refrigeration repair technician	96.0	36.9	5.5	74.1	5.5
Auto body repairer	143.4	63.3	4.2	134.9	4.2
Automotive mechanic/technician	298.9	90.4	2.1	271.5	2.1
Machinist	153.3	55.1	3.3	128.3	3.3
Building trades					
Bricklayer or mason	148.8	47.2	4.2	134.9	4.2
Carpenter	299.8	117.1	2.1	255.1	2.1
Electrician	186.1	81.3	3.1	149.1	3.1
Plumber	168.7	87.2	4.8	112.6	4.8
Welder	256.6	95.9	2.7	250.1	2.7
Health/life sciences occupations					
Emergency medical technician	146.5	82.0	6.5	116.3	6.5
Medical or dental assistant	138.0	70.4	4.3	120.6	4.3
Nurse or nurses' aide	187.1	79.8	2.2	158.8	2.2
Medical/life science lab technician	103.0	57.3	7.8	96.2	7.8
Agriscience technician	189.8	89.6	4.0	196.3	4.0
Veterinary assistant	144.9	84.1	6.8	113.8	6.8
Service occupations					
Chef/cook	283.7	103.2	2.4	232.3	2.4
Cosmetologist	127.3	64.1	3.4	98.7	3.4
Childcare worker or teachers' aide	219.4	79.8	2.4	210.4	2.4
Paralegal/legal assistant	63.9	22.6	9.0	62.3	9.0

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 4.—Percent of public secondary schools that offer occupational programs, by school type, broad program area, and specific program: 1999

Public secondary schools that offer:	Percent of all schools[1]			Percent of schools with one or more programs[2]		
	All	Vocational	Comprehensive	All	Vocational	Comprehensive
At least one of the listed programs	66	98	63	100	100	100
At least one of the listed programs for:						
Business and marketing occupations	56	78	54	85	80	86
Technical occupations	40	75	36	60	76	57
Mechanical occupations	31	79	26	48	80	41
Building trades	36	85	30	55	87	49
Health/life sciences occupations	32	75	27	48	77	42
Service occupations	32	73	27	49	75	44
The listed program for:						
Business and marketing occupations						
Accountant/bookkeeper	46	52	46	70	53	73
Administrative assistant/secretary	36	53	34	54	54	54
Restaurant/food service manager	14	28	12	21	29	19
Sales associate	17	24	16	26	24	26
Technical occupations						
Computer programmer	11	29	9	17	29	15
Computer graphics designer	13	30	11	20	31	18
Computer/electronics technician	14	43	11	21	44	17
Engineering technician	3	9	2	4	9	3
Drafter or CADD operator	32	53	29	48	54	47
Mechanical occupations						
AC/heating/refrigeration repair technician	4	22	2	6	23	3
Auto body repairer	11	45	6	16	46	10
Automotive mechanic/technician	27	72	22	41	73	35
Machinist	10	37	7	15	38	11
Building trades						
Bricklayer or mason	8	25	6	12	26	9
Carpenter	28	73	22	42	75	36
Electrician	13	48	9	20	49	14
Plumber	7	29	4	10	80	7
Welder	23	65	18	35	66	29
Health/life sciences occupations						
Emergency medical technician	6	20	5	10	20	8
Medical or dental assistant	9	33	6	14	33	10
Nurse or nurses' aide	19	59	14	29	60	23
Medical/life science lab technician	4	11	3	6	11	6
Agriscience technician	14	22	13	20	23	19
Veterinary assistant	6	17	5	9	17	8
Service occupations						
Chef/cook	20	53	16	31	54	26
Cosmetologist	9	42	5	14	42	9
Childcare worker or teachers' aide	20	41	17	30	42	28
Paralegal/legal assistant	2	6	1	3	6	2

[1]Percentages represent the number of schools with a program among all schools of that type.
[2]Percentages represent the number of schools with a program among all schools of that type that offer at least one listed occupational program.
NOTE: Estimates are based on public secondary schools with 11th and 12th grades.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 4a.—Standard errors of the percent of public secondary schools that offer occupational programs, by school type, broad program area, and specific program: 1999

Public secondary schools that offer:	Percent of all schools			Percent of schools with one or more programs		
	All	Vocational	Comprehensive	All	Vocational	Comprehensive
At least one of the listed programs	2.1	0.4	2.3	(*)	(*)	(*)
At least one of the listed programs for:						
Business and marketing occupations	2.5	2.9	2.7	2.3	2.9	2.5
Technical occupations	1.9	3.4	1.8	2.1	3.5	2.3
Mechanical occupations	1.8	4.1	1.9	2.4	4.3	2.9
Building trades	1.8	3.6	1.9	2.3	3.7	2.7
Health/life sciences occupations	1.6	3.5	1.7	2.0	3.6	2.4
Service occupations	1.5	3.7	1.5	2.2	3.8	2.5
The listed program for:						
Business and marketing occupations						
Accountant/bookkeeper	2.6	3.7	2.8	2.6	3.7	3.0
Administrative assistant/secretary	2.1	3.1	2.2	2.5	3.2	2.9
Restaurant/food service manager	1.2	2.9	1.3	1.8	3.0	2.2
Sales associate	1.3	2.4	1.4	1.8	2.4	2.1
Technical occupations						
Computer programmer	1.3	3.4	1.2	1.7	3.4	1.7
Computer graphics designer	1.0	3.4	1.0	1.5	3.5	1.7
Computer/electronics technician	1.0	3.8	1.0	1.6	3.9	1.8
Engineering technician	0.6	1.9	0.6	1.0	1.9	1.0
Drafter or CADD operator	1.8	4.0	1.9	2.3	4.1	2.6
Mechanical occupations						
AC/heating/refrigeration repair technician	0.6	2.6	0.5	0.8	2.7	0.8
Auto body repairer	0.9	4.2	0.9	1.2	4.4	1.5
Automotive mechanic/technician	1.8	4.3	1.9	2.5	4.4	2.8
Machinist	0.9	3.3	0.9	1.5	3.4	1.5
Building trades						
Bricklayer or mason	0.9	3.1	0.9	1.3	3.1	1.4
Carpenter	1.8	3.7	1.7	2.8	3.8	3.0
Electrician	1.1	4.0	1.0	1.7	4.1	1.7
Plumber	1.0	4.2	0.8	1.5	4.2	1.3
Welder	1.5	3.7	1.7	2.1	3.8	2.6
Health/life sciences occupations						
Emergency medical technician	0.9	4.2	0.8	1.3	4.2	1.2
Medical or dental assistant	0.8	3.6	0.8	1.2	3.7	1.3
Nurse or nurses' aide	1.1	4.4	1.1	1.7	4.5	1.7
Medical/life science lab technician	0.6	3.0	0.6	0.9	3.1	1.0
Agriscience technician	1.1	4.1	1.3	1.6	4.2	1.9
Veterinary assistant	0.9	4.1	0.8	1.3	4.2	1.2
Service occupations						
Chef/cook	1.7	3.8	1.5	2.6	3.8	2.6
Cosmetologist	0.8	3.9	0.7	1.1	4.0	1.1
Childcare worker or teachers' aide	1.3	3.8	1.4	1.9	3.8	2.1
Paralegal/legal assistant	0.4	1.3	0.4	0.6	1.4	0.7

* Not applicable.

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 5.—Percent of public secondary schools offering listed occupational programs that use each of 5 procedures to ensure they teach jobs skills, by school type and broad program area: 1999

Public secondary schools that use procedure in:	All schools	Vocational	Comprehensive
All of the listed programs:[1]			
Industry advisory committee	51	70	47
Survey of employers' skill needs	46	55	44
Followup survey of graduates	51	71	47
Student work experience (e.g., internship)	37	49	35
Faculty externship (work experience)	24	26	23
At least one of the listed programs:[1]			
Industry advisory committee	70	91	65
Survey of employers' skill needs	67	73	66
Followup survey of graduates	72	88	69
Student work experience (e.g., internship)	72	83	70
Faculty externship (work experience)	48	58	46
All of the listed programs for:[2]			
Business and marketing occupations			
Industry advisory committee	56	73	53
Survey of employers' skill needs	55	60	54
Followup survey of graduates	62	79	59
Student work experience (e.g., internship)	55	72	52
Faculty externship (work experience)	31	39	29
Technical occupations			
Industry advisory committee	56	81	49
Survey of employers' skill needs	50	68	46
Followup survey of graduates	55	78	49
Student work experience (e.g., internship)	42	64	36
Faculty externship (work experience)	33	36	32
Mechanical occupations			
Industry advisory committee	71	90	64
Survey of employers' skill needs	58	67	55
Followup survey of graduates	64	80	58
Student work experience (e.g., internship)	56	72	49
Faculty externship (work experience)	36	41	34
Building trades			
Industry advisory committee	63	84	55
Survey of employers' skill needs	56	64	54
Followup survey of graduates	66	82	60
Student work experience (e.g., internship)	47	68	39
Faculty externship (work experience)	38	44	36
Health/life sciences occupations			
Industry advisory committee	76	90	71
Survey of employers' skill needs	64	70	62
Followup survey of graduates	64	84	57
Student work experience (e.g., internship)	68	77	66
Faculty externship (work experience)	34	46	31
Service occupations			
Industry advisory committee	65	81	59
Survey of employers' skill needs	56	61	54
Followup survey of graduates	64	80	58
Student work experience (e.g., internship)	65	68	64
Faculty externship (work experience)	32	35	31

Table 5.—Percent of public secondary schools offering listed occupational programs that use each of 5 procedures to ensure they teach jobs skills, by school type and broad program area: 1999 (continued)

Public secondary schools that use procedure in:	All schools	Vocational	Comprehensive
At least one of the listed programs for:[2]			
Business and marketing occupations			
Industry advisory committee	58	80	55
Survey of employers' skill needs	59	63	58
Followup survey of graduates	66	85	63
Student work experience (e.g., internship)	64	76	62
Faculty externship (work experience)	37	48	35
Technical occupations			
Industry advisory committee	62	83	56
Survey of employers' skill needs	58	70	54
Followup survey of graduates	61	82	55
Student work experience (e.g., internship)	51	71	46
Faculty externship (work experience)	41	42	40
Mechanical occupations			
Industry advisory committee	74	93	67
Survey of employers' skill needs	61	72	57
Followup survey of graduates	67	85	60
Student work experience (e.g., internship)	61	78	54
Faculty externship (work experience)	41	47	39
Building trades			
Industry advisory committee	66	88	59
Survey of employers' skill needs	58	69	55
Followup survey of graduates	69	86	63
Student work experience (e.g., internship)	51	74	44
Faculty externship (work experience)	41	50	38
Health/life sciences occupations			
Industry advisory committee	77	92	72
Survey of employers' skill needs	65	72	63
Followup survey of graduates	65	86	58
Student work experience (e.g., internship)	71	80	68
Faculty externship (work experience)	39	50	36
Service occupations			
Industry advisory committee	67	82	62
Survey of employers' skill needs	60	64	58
Followup survey of graduates	66	82	61
Student work experience (e.g., internship)	73	75	72
Faculty externship (work experience)	36	41	34

[1]The denominator in the percentage ratio represents the number of schools with at least one listed occupational program. The numerator is the number of those schools using the procedure (in all programs or in at least one program).

[2]The denominator in the percentage ratio represents the number of schools with at least one listed occupational program in the broad program area. The numerator is the number of those schools using the procedure (in all programs or in at least one program).

NOTE: Subtotals sum to more than 100 percent because multiple responses were allowed. Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 5a.—Standard errors of the percent of public secondary schools offering listed occupational programs that use each of 5 procedures to ensure they teach jobs skills, by school type and broad program area: 1999

Public secondary schools that use procedure in:	All schools	Vocational	Comprehensive
All of the listed programs:			
Industry advisory committee	2.6	3.9	3.0
Survey of employers' skill needs	2.7	4.8	3.0
Followup survey of graduates	3.0	3.8	3.3
Student work experience (e.g., internship)	2.5	3.7	3.1
Faculty externship (work experience)	2.1	2.8	2.4
At least one of the listed programs:			
Industry advisory committee	2.6	2.9	3.0
Survey of employers' skill needs	2.2	4.3	2.6
Followup survey of graduates	2.1	2.4	2.5
Student work experience (e.g., internship)	2.4	3.9	2.8
Faculty externship (work experience)	2.6	3.8	3.1
All of the listed programs for:			
Business and marketing occupations			
Industry advisory committee	2.6	4.2	2.9
Survey of employers' skill needs	2.8	5.9	3.2
Followup survey of graduates	2.9	4.0	3.2
Student work experience (e.g., internship)	2.5	4.9	2.9
Faculty externship (work experience)	2.4	3.7	2.8
Technical occupations			
Industry advisory committee	3.0	4.9	3.9
Survey of employers' skill needs	3.2	4.4	3.8
Followup survey of graduates	3.3	3.5	4.3
Student work experience (e.g., internship)	2.8	4.5	3.8
Faculty externship (work experience)	3.1	4.2	3.7
Mechanical occupations			
Industry advisory committee	3.1	2.6	4.1
Survey of employers' skill needs	3.9	3.4	5.5
Followup survey of graduates	3.5	2.7	4.8
Student work experience (e.g., internship)	3.5	3.7	4.9
Faculty externship (work experience)	3.9	3.3	5.3
Building trades			
Industry advisory committee	2.7	4.0	3.4
Survey of employers' skill needs	3.1	4.5	3.6
Followup survey of graduates	3.8	3.3	5.1
Student work experience (e.g., internship)	3.0	3.4	4.1
Faculty externship (work experience)	3.1	3.4	4.3
Health/life sciences occupations			
Industry advisory committee	3.2	3.0	4.0
Survey of employers' skill needs	3.7	4.6	4.6
Followup survey of graduates	3.4	2.9	4.4
Student work experience (e.g., internship)	2.9	3.4	3.9
Faculty externship (work experience)	3.0	4.1	4.1
Service occupations			
Industry advisory committee	3.2	4.9	4.1
Survey of employers' skill needs	3.7	5.3	4.9
Followup survey of graduates	3.3	2.8	4.3
Student work experience (e.g., internship)	2.8	5.0	4.0
Faculty externship (work experience)	3.2	4.1	3.8

Table 5a.—Standard errors of the percent of public secondary schools offering listed occupational programs that use each of 5 procedures to ensure they teach jobs skills, by school type and broad program area: 1999 (continued)

Public secondary schools that use procedure in:	All schools	Vocational	Comprehensive
At least one of the listed programs for:			
Business and marketing occupations			
Industry advisory committee	2.5	4.5	3.0
Survey of employers' skill needs	2.6	6.1	3.1
Followup survey of graduates	2.8	3.3	3.2
Student work experience (e.g., internship)	2.3	4.8	2.7
Faculty externship (work experience)	2.7	3.9	3.2
Technical occupations			
Industry advisory committee	3.1	4.9	4.0
Survey of employers' skill needs	3.6	4.4	4.4
Followup survey of graduates	2.9	3.3	3.8
Student work experience (e.g., internship)	2.6	4.5	3.6
Faculty externship (work experience)	3.4	4.4	4.0
Mechanical occupations			
Industry advisory committee	3.3	2.5	4.2
Survey of employers' skill needs	3.9	3.1	5.3
Followup survey of graduates	3.1	2.8	4.3
Student work experience (e.g., internship)	3.5	3.6	4.7
Faculty externship (work experience)	4.1	3.3	5.4
Building trades			
Industry advisory committee	2.7	4.1	3.5
Survey of employers' skill needs	2.7	4.3	3.5
Followup survey of graduates	3.7	2.7	5.2
Student work experience (e.g., internship)	3.1	3.6	4.3
Faculty externship (work experience)	3.1	3.3	4.3
Health/life sciences occupations			
Industry advisory committee	3.1	2.9	4.0
Survey of employers' skill needs	3.5	4.6	4.6
Followup survey of graduates	3.4	2.7	4.4
Student work experience (e.g., internship)	2.6	3.3	3.5
Faculty externship (work experience)	3.1	4.0	4.4
Service occupations			
Industry advisory committee	3.2	5.0	4.2
Survey of employers' skill needs	3.8	5.7	5.0
Followup survey of graduates	3.4	2.8	4.3
Student work experience (e.g., internship)	2.7	4.8	3.9
Faculty externship (work experience)	3.3	4.9	4.1

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 6.—Percent of public secondary schools offering listed occupational programs that use a skill competency list, by school type and broad program area: 1999

Public secondary schools using a skill competency list in:	All schools	Vocational	Comprehensive
All of the listed programs[1]	78	84	77
At least one of the listed programs[1]	95	99	94
All of the listed programs for:[2]			
Business and marketing occupations	85	90	84
Technical occupations	83	93	80
Mechanical occupations	89	95	87
Building trades	85	94	82
Health/life sciences occupations	95	97	95
Service occupations	90	96	88
At least one of the listed programs for:[2]			
Business and marketing occupations	89	92	89
Technical occupations	88	94	86
Mechanical occupations	91	97	89
Building trades	88	97	86
Health/life sciences occupations	96	99	95
Service occupations	91	98	89

[1]These figures vary slightly from those presented in a previous NCES report (NCES 2000-023) and reflect a slight refinement in computer programming since that report was issued.

[2]The denominator in the percentage ratio represents the number of schools with at least one listed occupational program in the broad program area. The numerator is the number of those schools using a skill competency list (in all programs or in at least one program).

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 6a.—Standard errors of the percent of public secondary schools offering listed occupational programs that use a skill competency list, by school type and broad program area: 1999

Public secondary schools using a skill competency list in:	All schools	Vocational	Comprehensive
All of the listed programs	2.3	3.8	2.6
At least one of the listed programs	1.2	1.0	1.4
All of the listed programs for:			
Business and marketing occupations	2.1	4.2	2.3
Technical occupations	2.5	2.5	3.2
Mechanical occupations	2.1	2.1	2.8
Building trades	2.4	2.8	3.1
Health/life sciences occupations	1.1	1.3	1.6
Service occupations	2.6	1.3	3.5
At least one of the listed programs for:			
Business and marketing occupations	1.8	4.2	1.9
Technical occupations	2.1	2.5	2.6
Mechanical occupations	2.0	2.1	2.5
Building trades	2.0	1.9	2.7
Health/life sciences occupations	1.1	1.3	1.5
Service occupations	2.3	1.3	3.2

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 7.—Percent of public secondary schools offering listed occupational programs with different levels of involvement by educators and industry in developing or adopting skill competency lists, by school type and broad program area: 1999

Public secondary schools with each level of educator/industry involvement in:	All schools	Vocational	Comprehensive
All of the listed programs:[1]			
Done exclusively by individual course instructors or group(s) of educators	8	4	9
Done primarily by educators with industry input	15	8	16
Done with about equal educator and industry input	7	4	8
Done primarily/exclusively by industry	—	—	—
At least one of the listed programs:[1]			
Done exclusively by individual course instructors or group(s) of educators	32	19	35
Done primarily by educators with industry input	54	62	53
Done with about equal educator and industry input	34	49	31
Done primarily/exclusively by industry	6	9	5
All of the listed programs for:[2]			
Business and marketing occupations			
Done exclusively by individual course instructors or group(s) of educators	20	10	22
Done primarily by educators with industry input	41	45	40
Done with about equal educator and industry input	21	29	20
Done primarily/exclusively by industry	—	1	—
Technical occupations			
Done exclusively by individual course instructors or group(s) of educators	16	11	17
Done primarily by educators with industry input	39	46	37
Done with about equal educator and industry input	20	28	19
Done primarily/exclusively by industry	1	1	—
Mechanical occupations			
Done exclusively by individual course instructors or group(s) of educators	13	5	16
Done primarily by educators with industry input	43	48	41
Done with about equal educator and industry input	26	32	24
Done primarily/exclusively by industry	2	2	2
Building trades			
Done exclusively by individual course instructors or group(s) of educators	18	5	23
Done primarily by educators with industry input	39	52	34
Done with about equal educator and industry input	22	32	19
Done primarily/exclusively by industry	2	2	2
Health/life sciences occupations			
Done exclusively by individual course instructors or group(s) of educators	14	8	16
Done primarily by educators with industry input	38	42	36
Done with about equal educator and industry input	34	39	32
Done primarily/exclusively by industry	4	2	5
Service occupations			
Done exclusively by individual course instructors or group(s) of educators	17	13	18
Done primarily by educators with industry input	42	43	42
Done with about equal educator and industry input	25	31	22
Done primarily/exclusively by industry	2	2	2

Table 7.—Percent of public secondary schools offering listed occupational programs with different levels of involvement by educators and industry in developing or adopting skill competency lists, by school type and broad program area: 1999 (continued)

Public secondary schools with each level of educator/industry involvement in:	All schools	Vocational	Comprehensive
At least one of the listed programs for:[2]			
Business and marketing occupations			
Done exclusively by individual course instructors or group(s) of educators	23	13	25
Done primarily by educators with industry input	46	50	45
Done with about equal educator and industry input	23	33	22
Done primarily/exclusively by industry	1	1	—
Technical occupations			
Done exclusively by individual course instructors or group(s) of educators	22	14	24
Done primarily by educators with industry input	46	52	44
Done with about equal educator and industry input	26	33	24
Done primarily/exclusively by industry	2	3	2
Mechanical occupations			
Done exclusively by individual course instructors or group(s) of educators	16	8	18
Done primarily by educators with industry input	48	54	46
Done with about equal educator and industry input	29	37	26
Done primarily/exclusively by industry	4	5	3
Building trades			
Done exclusively by individual course instructors or group(s) of educators	20	5	25
Done primarily by educators with industry input	44	55	40
Done with about equal educator and industry input	25	37	20
Done primarily/exclusively by industry	2	3	2
Health/life sciences occupations			
Done exclusively by individual course instructors or group(s) of educators	15	10	17
Done primarily by educators with industry input	40	46	38
Done with about equal educator and industry input	37	44	35
Done primarily/exclusively by industry	5	5	5
Service occupations			
Done exclusively by individual course instructors or group(s) of educators	18	14	19
Done primarily by educators with industry input	45	48	44
Done with about equal educator and industry input	28	36	26
Done primarily/exclusively by industry	4	7	4

— Too few cases for reliable estimate.

[1]The denominator in the percentage ratio represents the number of schools with at least one listed occupational program. The numerator is the number of those schools with each level of involvement (in all programs or in at least one program).

[2]The denominator in the percentage ratio represents the number of schools with at least one listed occupational program in the broad program area. The numerator is the number of those schools with each level of involvement (in all programs or in at least one program).

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 7a.—Standard errors of the percent of public secondary schools offering listed occupational programs with different levels of involvement by educators and industry in developing or adopting skill competency lists, by school type and broad program area: 1999

Public secondary schools with each level of educator/industry involvement in:	All schools	Vocational	Comprehensive
All of the listed programs:			
Done exclusively by individual course instructors or group(s) of educators	1.3	2.0	1.5
Done primarily by educators with industry input	1.6	2.4	2.0
Done with about equal educator and industry input	1.2	2.1	1.4
Done primarily/exclusively by industry	—	—	—
At least one of the listed programs:			
Done exclusively by individual course instructors or group(s) of educators	2.3	4.0	2.8
Done primarily by educators with industry input	2.4	3.2	2.9
Done with about equal educator and industry input	2.4	4.2	2.7
Done primarily/exclusively by industry	0.9	0.9	1.0
All of the listed programs for:			
Business and marketing occupations			
Done exclusively by individual course instructors or group(s) of educators	1.6	3.1	1.9
Done primarily by educators with industry input	2.8	3.8	3.4
Done with about equal educator and industry input	2.5	3.6	2.7
Done primarily/exclusively by industry	—	0.2	—
Technical occupations			
Done exclusively by individual course instructors or group(s) of educators	2.2	4.4	2.8
Done primarily by educators with industry input	2.9	4.2	3.3
Done with about equal educator and industry input	2.4	3.2	3.0
Done primarily/exclusively by industry	0.4	0.4	—
Mechanical occupations			
Done exclusively by individual course instructors or group(s) of educators	2.3	1.7	3.0
Done primarily by educators with industry input	2.6	3.4	3.6
Done with about equal educator and industry input	2.7	2.9	3.4
Done primarily/exclusively by industry	1.1	0.5	1.5
Building trades			
Done exclusively by individual course instructors or group(s) of educators	2.5	1.3	3.2
Done primarily by educators with industry input	2.9	3.9	3.9
Done with about equal educator and industry input	2.5	3.5	3.3
Done primarily/exclusively by industry	0.8	0.4	1.0
Health/life sciences occupations			
Done exclusively by individual course instructors or group(s) of educators	2.8	4.1	3.5
Done primarily by educators with industry input	3.2	3.9	3.9
Done with about equal educator and industry input	3.3	3.9	4.0
Done primarily/exclusively by industry	1.2	0.4	1.6
Service occupations			
Done exclusively by individual course instructors or group(s) of educators	2.6	5.1	3.2
Done primarily by educators with industry input	3.0	4.1	4.1
Done with about equal educator and industry input	2.5	4.7	3.0
Done primarily/exclusively by industry	0.7	0.5	1.0

Table 7a.—Standard errors of the percent of public secondary schools offering listed occupational programs with different levels of involvement by educators and industry in developing or adopting skill competency lists, by school type and broad program area: 1999 (continued)

Public secondary schools with each level of educator/industry involvement in:	All schools	Vocational	Comprehensive
At least one of the listed programs for:			
Business and marketing occupations			
Done exclusively by individual course instructors or group(s) of educators	1.9	4.1	2.3
Done primarily by educators with industry input	2.9	3.6	3.4
Done with about equal educator and industry input	2.6	3.8	2.8
Done primarily/exclusively by industry	0.3	0.4	—
Technical occupations			
Done exclusively by individual course instructors or group(s) of educators	2.6	4.5	3.0
Done primarily by educators with industry input	2.7	4.4	3.1
Done with about equal educator and industry input	2.6	3.3	3.2
Done primarily/exclusively by industry	0.7	0.4	0.9
Mechanical occupations			
Done exclusively by individual course instructors or group(s) of educators	2.3	2.0	3.2
Done primarily by educators with industry input	3.3	3.5	4.4
Done with about equal educator and industry input	2.7	3.0	3.4
Done primarily/exclusively by industry	1.1	0.8	1.5
Building trades			
Done exclusively by individual course instructors or group(s) of educators	2.9	1.3	3.5
Done primarily by educators with industry input	2.7	3.7	3.9
Done with about equal educator and industry input	2.6	3.6	3.1
Done primarily/exclusively by industry	0.8	0.6	1.0
Health/life sciences occupations			
Done exclusively by individual course instructors or group(s) of educators	2.8	4.4	3.6
Done primarily by educators with industry input	3.1	4.0	4.0
Done with about equal educator and industry input	3.6	4.0	4.4
Done primarily/exclusively by industry	1.2	0.8	1.6
Service occupations			
Done exclusively by individual course instructors or group(s) of educators	2.5	5.1	3.1
Done primarily by educators with industry input	3.3	4.3	4.4
Done with about equal educator and industry input	2.5	4.7	2.9
Done primarily/exclusively by industry	1.0	1.0	1.2

— Too few cases for reliable estimate.

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 8.—Percent of public secondary schools offering listed occupational programs that use any criteria to determine whether a student is a program completer, by school type and broad program area: 1999

Public secondary schools that use program completer criteria in:	All schools	Vocational	Comprehensive
All of the listed programs	77	90	74
At least one of the listed programs	89	98	87
All of the listed programs for:[1]			
Business and marketing occupations	83	96	80
Technical occupations	80	96	76
Mechanical occupations	85	98	80
Building trades	83	92	80
Health/life sciences occupations	88	93	87
Service occupations	85	96	81
At least one of the listed programs for:[1]			
Business and marketing occupations	85	97	83
Technical occupations	84	97	81
Mechanical occupations	87	98	82
Building trades	84	95	81
Health/life sciences occupations	89	94	87
Service occupations	87	97	84

[1]The denominator in the percentage ratio represents the number of schools with at least one listed occupational program in the broad program area. The numerator is the number of those schools using any criteria (in all programs or in at least one program).

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 8a.—Standard errors of the percent of public secondary schools offering listed occupational programs that use any criteria to determine whether a student is a program completer, by school type and broad program area: 1999

Public secondary schools that use program completer criteria in:	All schools	Vocational	Comprehensive
All of the listed programs	2.1	2.6	2.5
At least one of the listed programs	1.8	1.5	2.1
All of the listed programs for:			
Business and marketing occupations	2.0	1.9	2.3
Technical occupations	2.9	2.0	3.6
Mechanical occupations	2.5	0.6	3.4
Building trades	2.7	3.0	3.6
Health/life sciences occupations	2.6	2.3	3.4
Service occupations	3.2	1.7	4.2
At least one of the listed programs for:			
Business and marketing occupations	1.9	1.9	2.2
Technical occupations	2.7	2.0	3.4
Mechanical occupations	2.4	0.5	3.4
Building trades	2.8	2.2	3.7
Health/life sciences occupations	2.4	2.3	3.1
Service occupations	2.9	1.6	3.7

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 9.--Percent of public secondary schools offering listed occupational programs that use each of 4 criteria to determine whether a student is a program completer, by school type and broad program area: 1999

Public secondary schools that use each criterion to define a program completer in:	All schools	Vocational	Comprehensive
All of the listed programs:[1]			
End of program exam (not course or graduation exam)	17	18	17
Pass specific vocational courses	59	66	58
Minimum grade point average in program	18	27	17
Pass specific academic courses, different from graduation requirements	9	6	9
At least one of the listed programs:[1]			
End of program exam (not course or graduation exam)	30	32	30
Pass specific vocational courses	75	84	73
Minimum grade point average in program	25	37	23
Pass specific academic courses, different from graduation requirements	17	12	18
All of the listed programs for:[2]			
Business and marketing occupations			
End of program exam (not course or graduation exam)	20	17	21
Pass specific vocational courses	67	80	65
Minimum grade point average in program	20	31	18
Pass specific academic courses, different from graduation requirements	12	7	13
Technical occupations			
End of program exam (not course or graduation exam)	20	22	19
Pass specific vocational courses	61	77	57
Minimum grade point average in program	20	30	18
Pass specific academic courses, different from graduation requirements	7	6	8
Mechanical occupations			
End of program exam (not course or graduation exam)	21	26	20
Pass specific vocational courses	66	75	63
Minimum grade point average in program	22	32	18
Pass specific academic courses, different from graduation requirements	9	9	9
Building trades			
End of program exam (not course or graduation exam)	21	21	22
Pass specific vocational courses	66	75	63
Minimum grade point average in program	19	27	16
Pass specific academic courses, different from graduation requirements	9	8	10
Health/life sciences occupations			
End of program exam (not course or graduation exam)	27	26	28
Pass specific vocational courses	70	70	66
Minimum grade point average in program	25	33	22
Pass specific academic courses, different from graduation requirements	14	10	11
Service occupations			
End of program exam (not course or graduation exam)	23	24	6
Pass specific vocational courses	68	77	18
Minimum grade point average in program	24	29	6
Pass specific academic courses, different from graduation requirements	10	8	3

Table 9.---Percent of public secondary schools offering listed occupational programs that use each of 4 criteria to determine whether a student is a program completer, by school type and broad program area: 1999 (continued)

Public secondary schools that use each criterion to define a program completer in:	All schools	Vocational	Comprehensive
At least one of the listed programs for:[1]			
Business and marketing occupations			
End of program exam (not course or graduation exam)	23	19	23
Pass specific vocational courses	70	84	67
Minimum grade point average in program	22	34	20
Pass specific academic courses, different from graduation	14	10	15
Technical occupations			
End of program exam (not course or graduation exam)	24	24	24
Pass specific vocational courses	67	79	64
Minimum grade point average in program	22	31	20
Pass specific academic courses, different from graduation	10	9	11
Mechanical occupations			
End of program exam (not course or graduation exam)	24	26	23
Pass specific vocational courses	69	78	65
Minimum grade point average in program	23	32	19
Pass specific academic courses, different from graduation	10	9	10
Building trades			
End of program exam (not course or graduation exam)	24	23	24
Pass specific vocational courses	67	78	64
Minimum grade point average in program	21	29	18
Pass specific academic courses, different from graduation	10	8	11
Health/life sciences occupations			
End of program exam (not course or graduation exam)	29	27	30
Pass specific vocational courses	71	72	71
Minimum grade point average in program	25	34	22
Pass specific academic courses, different from graduation	14	10	15
Service occupations			
End of program exam (not course or graduation exam)	24	27	24
Pass specific vocational courses	71	78	68
Minimum grade point average in program	24	30	22
Pass specific academic courses, different from graduation	11	9	11

[1]The denominator in the percentage ratio represents the number of schools with at least one listed occupational program. The numerator is the number of those schools using each criterion (in all programs or in at least one program).
[2]The denominator in the percentage ratio represents the number of schools with at least one listed occupational program in the broad program area. The numerator is the number of these schools using each criterion (in all programs or in at least one program).
NOTE: Estimates are based on public secondary schools with 11th and 12th grades.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 9a.—Standard errors of the percent of public secondary schools offering listed occupational programs that use each of 4 criteria to determine whether a student is a program completer, by school type and broad program area: 1999

Public secondary schools that use each criterion to define a program completer in:	All schools	Vocational	Comprehensive
All of the listed programs:			
End of program exam (not course or graduation exam)	1.6	3.6	1.9
Pass specific vocational courses	2.4	3.9	2.8
Minimum grade point average in program	1.2	3.1	1.4
Pass specific academic courses, different from graduation requirements	1.3	0.9	1.5
At least one of the listed programs:			
End of program exam (not course or graduation exam)	2.2	3.7	2.6
Pass specific vocational courses	2.1	3.0	2.4
Minimum grade point average in program	1.6	3.5	1.8
Pass specific academic courses, different from graduation requirements	1.4	2.0	1.7
All of the listed programs for:			
Business and marketing occupations			
End of program exam (not course or graduation exam)	2.1	3.3	2.5
Pass specific vocational courses	2.2	4.0	2.6
Minimum grade point average in program	1.3	3.4	1.4
Pass specific academic courses, different from graduation requirements	1.4	1.1	1.7
Technical occupations			
End of program exam (not course or graduation exam)	2.2	3.4	2.4
Pass specific vocational courses	3.1	3.3	3.7
Minimum grade point average in program	2.4	3.8	2.8
Pass specific academic courses, different from graduation requirements	1.5	0.8	1.9
Mechanical occupations			
End of program exam (not course or graduation exam)	2.2	3.7	3.1
Pass specific vocational courses	2.7	4.6	3.7
Minimum grade point average in program	2.3	3.4	2.8
Pass specific academic courses, different from graduation requirements	1.7	1.0	2.3
Building trades			
End of program exam (not course or graduation exam)	2.6	3.4	3.3
Pass specific vocational courses	3.4	4.7	4.3
Minimum grade point average in program	2.0	2.6	2.6
Pass specific academic courses, different from graduation requirements	1.8	1.0	2.4
Health/life sciences occupations			
End of program exam (not course or graduation exam)	3.0	3.4	3.8
Pass specific vocational courses	3.1	3.7	4.0
Minimum grade point average in program	1.9	3.2	2.3
Pass specific academic courses, different from graduation requirements	1.7	1.7	2.1
Service occupations			
End of program exam (not course or graduation exam)	3.1	3.5	3.6
Pass specific vocational courses	3.6	3.2	4.6
Minimum grade point average in program	2.4	3.4	2.6
Pass specific academic courses, different from graduation requirements	1.9	1.1	2.5

Table 9a.—Standard errors of the percent of public secondary schools offering listed occupational programs that use each of 4 criteria to determine whether a student is a program completer, by school type and broad program area: 1999 (continued)

Public secondary schools that use each criterion to define a program completer in:	All schools	Vocational	Comprehensive
At least one of the listed programs for:			
Business and marketing occupations			
End of program exam (not course or graduation exam)	2.2	3.4	2.5
Pass specific vocational courses	2.3	3.5	2.7
Minimum grade point average in program	1.4	3.5	1.6
Pass specific academic courses, different from graduation	1.7	1.9	1.9
Technical occupations			
End of program exam (not course or graduation exam)	2.6	3.5	2.9
Pass specific vocational courses	2.8	3.3	3.4
Minimum grade point average in program	2.7	3.8	3.1
Pass specific academic courses, different from graduation	1.9	1.5	2.4
Mechanical occupations			
End of program exam (not course or graduation exam)	2.7	3.7	3.8
Pass specific vocational courses	2.8	4.5	3.6
Minimum grade point average in program	2.4	3.4	2.8
Pass specific academic courses, different from graduation	1.7	1.1	2.3
Building trades			
End of program exam (not course or graduation exam)	2.9	3.6	3.6
Pass specific vocational courses	3.5	3.8	4.4
Minimum grade point average in program	2.5	3.1	3.2
Pass specific academic courses, different from graduation	1.8	1.0	2.4
Health/life sciences occupations			
End of program exam (not course or graduation exam)	2.9	3.4	3.7
Pass specific vocational courses	3.0	3.7	4.0
Minimum grade point average in program	1.9	3.2	2.3
Pass specific academic courses, different from graduation	1.7	1.7	2.1
Service occupations			
End of program exam (not course or graduation exam)	3.1	3.6	3.5
Pass specific vocational courses	3.3	3.1	4.0
Minimum grade point average in program	2.4	3.4	2.7
Pass specific academic courses, different from graduation	1.9	1.1	2.6

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 10.—Percent of public secondary schools offering listed occupational programs that prepare students for a state or industry regulatory exam, by school type, broad program area, and specific program: 1999

Public secondary schools that prepare students for state or industry regulatory exam in:	All schools	Vocational	Comprehensive
All of the listed programs	7	7	6
At least one of the listed programs	41	67	36
All the listed programs for:[1]			
Business and marketing occupations	7	8	6
Technical occupations	9	16	7
Mechanical occupations	19	18	19
Building trades	14	15	14
Health/life sciences occupations	36	40	34
Service occupations	19	22	18
At least one of the listed programs for:[1]			
Business and marketing occupations	10	12	9
Technical occupations	16	28	13
Mechanical occupations	28	37	25
Building trades	22	31	18
Health/life sciences occupations	47	63	41
Service occupations	36	57	30
The listed program for:[2]			
Business and marketing occupations			
Accountant/bookkeeper	8	7	8
Administrative assistant/secretary	8	7	8
Restaurant/food service manager	8	21	4
Sales associate	9	6	10
Technical occupations			
Computer programmer	12	29	6
Computer graphics designer	8	17	5
Computer/electronics technician	27	33	24
Engineering technician	—	8	—
Drafter or CADD operator	10	15	9
Mechanical occupation			
AC/heating/refrigeration repair technician	44	51	36
Auto body repairer	25	30	21
Automotive mechanic/technician	29	33	27
Machinist	15	17	14
Building trades			
Bricklayer or mason	18	19	17
Carpenter	13	17	11
Electrician	21	32	13
Plumber	16	22	10
Welder	20	26	17
Health/life sciences occupations			
Emergency medical technician	42	63	32
Medical or dental assistant	33	33	32
Nurse or nurses' aide	63	71	59
Medical/life science lab technician	26	32	23
Agriscience technician	11	5	13
Veterinary assistant	19	9	24
Service occupations			
Chef/cook	13	14	13
Cosmetologist	80	88	72
Childcare worker or teachers' aide	21	24	20
Paralegal/legal assistant	—	—	—

— Too few cases for reliable estimate.

[1]The denominator in the percentage ratio represents the number of schools with at least one listed occupational program in the broad program area. The numerator is the number of those schools preparing students for a state or industry regulatory exam (in all programs or in at least one program).

[2]The denominator in the percentage ratio represents the number of schools with the listed occupational program. The numerator is the number of those schools preparing students for a state or industry regulatory exam in the program.

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 10a.—Standard errors of the percent of public secondary schools offering listed occupational programs that prepare students for a state or industry regulatory exam, by school type, broad program area, and specific program: 1999

Public secondary schools that prepare students for state or industry regulatory exam in:	All schools	Vocational	Comprehensive
All of the listed programs	1.1	1.8	1.3
At least one of the listed programs	2.1	4.9	2.3
All the listed programs for:			
Business and marketing occupations	1.3	1.6	1.5
Technical occupations	1.5	3.2	1.7
Mechanical occupations	2.8	2.5	3.6
Building trades	2.2	2.4	2.9
Health/life sciences occupations	2.6	3.1	3.3
Service occupations	2.5	2.9	3.0
At least one of the listed programs for:			
Business and marketing occupations	1.4	2.1	1.6
Technical occupations	1.6	3.7	1.9
Mechanical occupations area	2.7	3.6	3.3
Building trades	2.6	3.3	3.2
Health/life sciences occupations	2.6	4.3	3.4
Service occupations area	3.3	5.3	3.6
The listed program for:			
Business and marketing occupations			
Accountant/bookkeeper	1.5	2.4	1.7
Administrative assistant/secretary	1.7	1.4	2.0
Restaurant/food service manager	2.0	4.5	2.0
Sales associate	2.6	1.6	3.0
Technical occupations			
Computer programmer	3.3	8.0	2.9
Computer graphics designer	2.1	6.6	2.1
Computer/electronics technician	3.4	3.4	5.1
Engineering technician	—	2.7	—
Drafter or CADD operator	1.8	3.3	2.0
Mechanical occupations			
AC/heating/refrigeration repair technician	5.8	3.9	13.0
Auto body repairer	4.9	3.7	8.5
Automotive mechanic/technician	3.0	3.1	4.0
Machinist	4.1	3.4	6.5
Building trades			
Bricklayer or mason	4.1	4.8	6.1
Carpenter	2.2	2.8	2.8
Electrician	3.3	4.4	5.0
Plumber	4.2	5.0	7.2
Welder	3.3	3.1	4.5
Health/life sciences occupations			
Emergency medical technician	7.0	5.6	9.0
Medical or dental assistant	4.6	5.1	6.2
Nurse or nurses' aide	2.9	4.9	4.2
Medical/life science lab technician	6.6	13.8	8.6
Agriscience technician	3.1	1.8	3.8
Veterinary assistant	7.1	3.4	9.4
Service occupations			
Chef/cook	3.0	2.8	4.0
Cosmetologist	4.1	4.3	7.6
Childcare worker or teachers' aide	3.8	4.0	4.4
Paralegal/legal assistant	—	—	—

— Too few cases for reliable estimate.

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 11.—Percent of public secondary schools offering listed occupational programs that prepare students to earn a vocational/occupational skill certificate, by school type, broad program area, and specific program: 1999

Public secondary schools that prepare students to earn a skill certificate in:	All schools	Vocational	Comprehensive
All of the listed programs	31	52	27
At least one of the listed programs	55	81	50
All the listed programs for:[1]			
Business and marketing occupations	40	65	36
Technical occupations	37	62	30
Mechanical occupations	52	70	45
Building trades	46	68	39
Health/life sciences occupations	48	69	41
Service occupations	49	68	43
At least one of the listed programs in the area:[1]			
Business and marketing occupations	45	69	41
Technical occupations	43	67	37
Mechanical occupations	56	73	49
Building trades	50	70	42
Health/life sciences occupations	53	77	45
Service occupations	54	76	47
The listed program for:[2]			
Business and marketing occupations			
Accountant/bookkeeper	43	65	40
Administrative assistant/secretary	48	68	44
Restaurant/food service manager	52	78	45
Sales associate	44	66	40
Technical occupations			
Computer programmer	51	70	45
Computer graphics designer	49	70	43
Computer/electronics technician	66	88	55
Engineering technician	42	61	—
Drafter or CADD operator	38	69	31
Mechanical occupations			
AC/heating/refrigeration repair technician	72	83	—
Auto body repairer	69	83	58
Automotive mechanic/technician	59	75	53
Machinist	61	83	45
Building trades			
Bricklayer or mason	61	76	52
Carpenter	51	70	43
Electrician	54	79	36
Plumber	57	73	43
Welder	46	69	36
Health/life sciences occupations			
Emergency medical technician	52	71	42
Medical or dental assistant	62	84	48
Nurse or nurses' aide	64	76	58
Medical/life science lab technician	57	85	—
Agriscience technician	34	67	27
Veterinary assistant	45	62	38
Service occupations			
Chef/cook	53	71	45
Cosmetologist	63	75	52
Childcare worker or teachers' aide	50	80	42
Paralegal/legal assistant	39	63	—

— Too few cases for reliable estimate

[1]The denominator in the percentage ratio represents the number of schools with at least one listed occupational program in the broad program area. The numerator is the number of those schools preparing students for a skill certificate (in all programs or in at least one program).

[2]The denominator in the percentage ratio represents the number of schools with the listed occupational program. The numerator is the number of those schools preparing students for a skill certificate in the program.

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 11a.—Standard errors of the percent of public secondary schools offering listed occupational programs that prepare students to earn a vocational/occupational skill certificate, by school type, broad program area, and specific program: 1999

Public secondary schools that prepare students to earn a skill certificate in:	All schools	Vocational	Comprehensive
All of the listed programs	2.1	4.8	2.3
At least one of the listed programs	1.9	4.5	2.0
All the listed programs for:			
Business and marketing occupations	2.5	5.9	2.8
Technical occupations	2.6	4.5	3.1
Mechanical occupations	3.1	4.1	4.2
Building trades	2.5	5.2	3.3
Health/life sciences occupations	3.7	4.5	4.5
Service occupations	4.0	6.0	4.8
At least one of the listed programs for:			
Business and marketing occupations	2.3	6.0	2.6
Technical occupations	2.3	4.9	2.7
Mechanical occupations	3.3	4.2	4.3
Building trades	2.5	5.3	3.2
Health/life sciences occupations	3.6	4.5	4.5
Service occupations	3.8	4.9	4.8
The listed program for:			
Business and marketing occupations			
Accountant/bookkeeper	2.7	6.8	3.0
Administrative assistant/secretary	3.0	6.8	3.7
Restaurant/food service manager	6.0	5.9	7.4
Sales associate	4.0	7.9	4.3
Technical occupations			
Computer programmer	5.7	11.4	6.2
Computer graphics designer	4.3	7.9	5.9
Computer/electronics technician	3.7	2.3	4.9
Engineering technician	9.1	15.2	—
Drafter or CADD operator	2.7	5.2	3.1
Mechanical occupations			
AC/heating/refrigeration repair technician	7.1	5.1	—
Auto body repairer	5.4	3.6	9.4
Automotive mechanic/technician	3.7	4.4	5.1
Machinist	5.4	4.8	8.4
Building trades			
Bricklayer or mason	6.7	5.6	10.0
Carpenter	3.0	5.8	3.9
Electrician	5.0	6.5	6.5
Plumber	6.7	10.7	11.7
Welder	3.6	5.7	4.5
Health/life sciences occupations			
Emergency medical technician	5.4	6.8	8.2
Medical or dental assistant	5.2	5.4	7.3
Nurse or nurses' aide	3.2	3.6	4.7
Medical/life science lab technician	8.0	6.9	—
Agriscience technician	6.4	13.4	7.2
Veterinary assistant	7.5	16.3	9.3
Service occupations			
Chef/cook	4.8	7.9	6.2
Cosmetologist	4.5	4.9	7.0
Childcare worker or teachers' aide	5.0	4.9	6.2
Paralegal/legal assistant	8.5	17.4	—

— Too few cases for reliable estimate.

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 12.—Percent of public secondary schools offering each listed occupational program that have or have not developed or adopted skill competency lists for the program, by whether the program prepares students to earn a vocational/occupational skill certificate: 1999

Pubic secondary schools that offer each program:	A skill competency list has been developed or adopted for program?					
	Yes			No		
	All schools with program	Program prepares students to earn skill certificate?		All schools with program	Program prepares students to earn skill certificate?	
		Yes	No		Yes	No
Business and marketing occupations						
Accountant/bookkeeper	88	45	55	12	27	73
Administrative assistant/secretary	89	51	49	11	24	76
Restaurant/food service manager	96	53	47	4	—	—
Sales associate	89	46	54	11	28	72
Technical occupations						
Computer programmer	90	51	49	10	53	47
Computer graphics designer	84	54	46	16	27	73
Computer/electronics technician	88	72	28	12	—	86
Engineering technician	91	46	54	—	—	—
Drafter or CADD operator	88	40	60	12	17	83
Mechanical occupations						
AC/heating/refrigeration repair technician	99	72	29	—	—	—
Auto body repairer	85	76	24	15	31	69
Automotive mechanic/technician	95	60	40	5	44	56
Machinist	91	65	35	9	—	84
Building trades						
Bricklayer or mason	93	63	37	7	—	71
Carpenter	88	56	44	12	12	88
Electrician	81	62	38	19	17	83
Plumber	87	62	38	13	—	79
Welder	86	49	51	14	26	74
Health/life sciences occupations						
Emergency medical technician	95	55	45	5	—	95
Medical or dental assistant	95	65	35	5	—	96
Nurse or nurses' aide	97	65	35	3	—	68
Medical/life science lab technician	—	—	—	—	—	—
Agriscience technician	94	35	65	6	—	98
Veterinary assistant	97	46	54	—	—	—
Service occupations						
Chef/cook	92	56	44	8	—	84
Cosmetologist	98	64	36	—	—	—
Childcare worker or teachers' aide	91	54	46	9	17	83
Paralegal/legal assistant	—	—	—	—	—	—

— Too few cases for reliable estimate.

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 12a.—Standard errors of the percent of public secondary schools offering each listed occupational program that have or have not developed or adopted skill competency lists for the program, by whether the program prepares students to earn a vocational/occupational skill certificate: 1999

Public secondary schools that offer each program:	A skill competency list has been developed or adopted for program?					
	Yes			No		
	All schools with program	Program prepares students to earn skill certificates?		All schools with program	Program prepares students to earn skill certificates?	
		Yes	No		Yes	No
Business and marketing occupations						
Accountant/bookkeeper	2.1	3.2	3.2	2.1	6.2	6.2
Administrative assistant/secretary	1.8	3.0	3.0	1.8	8.4	8.4
Restaurant/food service manager	2.2	6.0	6.0	2.2	—	—
Sales associate	4.7	4.7	4.7	4.7	17.4	17.4
Technical occupations						
Computer programmer	4.2	6.4	6.4	4.2	16.1	16.1
Computer graphics designer	3.3	5.1	5.1	3.3	10.8	10.8
Computer/electronics technician	1.6	3.9	3.9	1.6	—	9.3
Engineering technician	8.3	9.3	9.3	—	—	—
Drafter or CADD operator	2.0	3.1	3.1	2.0	6.8	6.8
Mechanical occupations						
AC/heating/refrigeration repair technician	0.4	7.2	7.2	—	—	—
Auto body repairer	4.8	4.4	4.4	4.8	22.9	22.9
Automotive mechanic/technician	2.3	3.8	3.8	2.3	22.8	22.8
Machinist	1.8	5.2	5.2	1.8	—	13.1
Building trades occupations						
Bricklayer or mason	3.4	7.1	7.1	3.4	—	35.6
Carpenter	1.5	3.3	3.3	1.5	6.5	6.5
Electrician	3.1	5.2	5.2	3.1	9.0	9.0
Plumber	4.1	8.0	8.0	4.1	—	19.0
Welder	4.5	3.5	3.5	4.5	15.2	15.2
Health/life sciences occupations						
Emergency medical technician	0.4	6.3	6.3	0.4	—	6.4
Medical or dental assistant	0.2	5.4	5.4	0.2	—	4.3
Nurse or nurses' aide	1.3	3.2	3.2	1.3	—	30.4
Medical/life science lab technician	—	—	—	—	—	—
Agriscience technician	0.3	6.9	6.9	0.3	—	2.2
Veterinary assistant	2.0	7.3	7.3	—	—	—
Service occupations						
Chef/cook	1.5	5.0	5.0	1.5	—	8.9
Cosmetologist	0.3	4.5	4.5	—	—	—
Childcare worker or teachers' aide	1.9	5.4	5.4	1.9	8.4	8.4
Paralegal/legal assistant	—	—	—	—	—	—

— Too few cases for reliable estimate.

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 13.—Percent of public secondary schools offering each listed occupational program that do or do not prepare program students for a vocational/occupational skill certificate, by level of educator and industry involvement in developing or adopting skill competency list for the program: 1999

Public secondary schools that offer program for:	Program prepares students to earn a skill certificate?				
	Yes				
	All schools with program	Level of educator or industry involvement in developing or adopting program's competency list:			
		Done exclusively by educators	Done primarily by educators with industry input	Done with about equal educator and industry input	Done primarily/ exclusively by industry
Business and marketing occupations					
Accountant/bookkeeper	45	13	53	34	—
Administrative assistant/secretary	51	7	60	32	—
Restaurant/food service manager	53	12	51	36	—
Sales associate	46	12	58	27	—
Technical occupations					
Computer programmer	51	7	56	33	—
Computer graphics designer	54	8	65	26	—
Computer/electronics technician	72	8	57	31	4
Engineering technician	—	—	—	—	—
Drafter or CADD operator	40	9	57	32	—
Mechanical occupations					
AC/heating/refrigeration repair technician	72	—	53	41	—
Auto body repairer	76	9	55	33	—
Automotive mechanic/technician	60	8	54	35	4
Machinist	65	—	54	39	—
Building trades occupations					
Bricklayer or mason	63	9	46	44	—
Carpenter	56	10	55	32	2
Electrician	62	5	60	34	—
Plumber	62	—	53	43	—
Welder	50	11	51	37	2
Health/life sciences occupations					
Emergency medical technician	55	—	50	40	—
Medical or dental assistant	64	—	56	37	—
Nurse or nurses' aide	65	6	40	47	6
Medical/life science lab technician	—	—	—	—	—
Agriscience technician	36	8	41	50	—
Veterinary assistant	46	—	32	63	—
Service occupations					
Chef/cook	55	10	53	37	—
Cosmetologist	64	7	35	46	13
Childcare worker or teachers' aide	53	11	57	31	—
Paralegal/legal assistant	—	—	—	—	—

Table 13.—Percent of public secondary schools offering each listed occupational program that do or do not prepare program students for a vocational/occupational skill certificate, by level of educator and industry involvement in developing or adopting skill competency list for the program: 1999 (continued)

Public secondary schools that offer program for:	Program prepares students to earn a skill certificate?				
	No				
	All schools with program	Level of educator or industry involvement in developing or adopting program's competency list:			
		Done exclusively by educators	Done primarily by educators with industry input	Done with about equal educator and industry input	Done primarily/ exclusively by industry
Business and marketing occupations					
Accountant/bookkeeper	55	41	42	16	—
Administrative assistant/secretary	49	26	52	21	—
Restaurant/food service manager	47	12	56	29	—
Sales associate	54	10	66	21	—
Technical occupations					
Computer programmer	49	32	50	18	—
Computer graphics designer	46	24	48	25	—
Computer/electronics technician	28	12	49	34	5
Engineering technician	—	—	—	—	—
Drafter or CADD operator	60	35	42	22	—
Mechanical occupations					
AC/heating/refrigeration repair technician	—	—	—	—	—
Auto body repairer	—	—	—	—	—
Automotive mechanic/technician	40	30	43	25	3
Machinist	35	24	43	33	—
Building trades occupations					
Bricklayer or mason	37	25	49	27	—
Carpenter	44	28	53	17	—
Electrician	38	25	50	22	—
Plumber	—	—	—	—	—
Welder	50	38	36	22	4
Health/life sciences occupations					
Emergency medical technician	45	—	48	42	—
Medical or dental assistant	36	—	50	49	—
Nurse or nurses' aide	35	—	46	40	12
Medical/life science lab technician	—	—	—	—	—
Agriscience technician	64	42	38	20	—
Veterinary assistant	54	37	32	30	—
Service occupations					
Chef/cook	45	32	45	21	—
Cosmetologist	36	9	38	40	13
Childcare worker or teachers' aide	47	28	43	26	—
Paralegal/legal assistant	—	—	—	—	—

— Too few cases for reliable estimate.

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 13a.—Standard errors of the percent of public secondary schools offering each listed occupational program that do or do not prepare program students for a vocational/occupational skill certificate, by level of educator and industry involvement in developing or adopting skill competency list for the program: 1999

Public secondary schools that offer program for:	Program prepares students to earn a skill certificate?				
	Yes				
		Level of educator or industry involvement in developing or adopting program's competency list:			
	All schools with program	Done exclusively by educators	Done primarily by educators with industry input	Done with about equal educator and industry input	Done primarily/ exclusively by industry
Business and marketing occupations					
Accountant/bookkeeper	3.2	2.3	5.2	4.7	—
Administrative assistant/secretary	3.0	1.9	4.8	4.6	—
Restaurant/food service manager	6.0	3.3	7.1	7.8	—
Sales associate	4.7	4.2	6.1	5.1	—
Technical occupations					
Computer programmer	6.4	3.4	8.6	6.9	—
Computer graphics designer	5.1	2.6	6.4	5.4	—
Computer/electronics technician	3.9	1.7	4.7	4.8	1.8
Engineering technician	—	—	—	—	—
Drafter or CADD operator	3.1	2.6	5.4	4.6	—
Mechanical occupations					
AC/heating/refrigeration repair technician	7.2	—	6.0	5.5	—
Auto body repairer	4.5	1.6	4.8	4.2	—
Automotive mechanic/technician	3.8	1.9	3.7	3.5	1.7
Machinist	5.2	—	5.7	5.2	—
Building trades					
Bricklayer or mason	7.1	4.9	8.3	7.7	—
Carpenter	3.3	2.6	3.5	3.5	1.2
Electrician	5.2	1.6	4.6	4.6	—
Plumber	8.0	—	8.2	8.1	—
Welder	3.5	3.2	5.1	4.1	0.4
Health/life sciences occupations					
Emergency medical technician	6.3	—	9.3	8.5	—
Medical or dental assistant	5.4	—	6.4	6.2	—
Nurse or nurses' aide	3.2	2.3	3.7	4.4	2.4
Medical/life science lab technician	—	—	—	—	—
Agriscience technician	6.9	5.4	6.3	7.2	—
Veterinary assistant	7.3	—	8.2	8.9	—
Service occupations					
Chef/cook	5.0	2.4	7.0	5.8	—
Cosmetologist	4.5	2.2	5.6	5.4	3.3
Childcare worker or teachers' aide	5.4	2.6	6.3	5.0	—
Paralegal/legal assistant	—	—	—	—	—

Table 13a.—Standard errors of the percent of public secondary schools offering each listed occupational program that do or do not prepare program students for a vocational/occupational skill certificate, by level of educator and industry involvement in developing or adopting skill competency list for the program: 1999 (continued)

Public secondary schools that offer program for	Program prepares students to earn a skill certificate?				
	No				
	All schools with program	Level of educator or industry involvement in developing or adopting program's competency list			
		Done exclusively by educators	Done primarily by educators with industry input	Done with about equal educator and industry input	Done primarily/ exclusively by industry
Business and marketing occupations					
Accountant/bookkeeper	3.2	4.1	4.5	3.2	—
Administrative assistant/secretary	3.0	3.7	6.2	3.6	—
Restaurant/food service manager	6.0	3.7	8.6	6.5	—
Sales associate	4.7	4.1	6.6	5.4	—
Technical occupations					
Computer programmer	6.4	19.3	8.8	7.7	—
Computer graphics designer	5.1	10.7	9.4	6.2	—
Computer/electronics technician	3.9	5.1	11.2	8.6	4.7
Engineering technician	—	—	—	—	—
Drafter or CADD operator	3.1	6.8	5.0	3.9	—
Mechanical occupations					
AC/heating/refrigeration repair technician	—	—	—	—	—
Auto body repairer	—	—	—	—	—
Automotive mechanic/technician	3.8	4.6	7.2	5.4	1.4
Machinist	5.2	8.2	10.4	8.5	—
Building trades					
Bricklayer or mason	7.1	8.8	15.2	12.3	—
Carpenter	3.3	4.4	6.2	4.8	—
Electrician	5.2	7.3	11.8	6.6	—
Plumber	—	—	—	—	—
Welder	3.5	7.1	5.5	6.6	2.5
Health/life sciences occupations					
Emergency medical technician	6.3	—	9.2	8.5	—
Medical or dental assistant	5.4	—	8.3	8.3	—
Nurse or nurses' aide	3.2	—	7.5	7.2	4.8
Medical/life science lab technician	—	—	—	—	—
Agriscience technician	6.9	8.0	9.6	4.9	—
Veterinary assistant	7.3	11.5	9.9	9.7	—
Service occupations					
Chef/cook	5.0	4.6	6.3	4.2	—
Cosmetologist	4.5	5.3	8.0	8.8	5.9
Childcare worker or teachers' aide	5.4	6.6	7.0	4.6	—
Paralegal/legal assistant	—	—	—	—	—

— Too few cases for reliable estimate.

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 14.—Percent of public secondary schools offering each listed occupational program that do or do not prepare program students for a vocational/occupational skill certificate, by criterion used to determine whether student is a program completer: 1999

Public secondary schools that offer program for	Program prepares students to earn a skill certificate[1]				
	Yes				
	All schools with program	Criterion used to determine whether a student is a program completer			
		End of program exam	Pass specific vocational courses	Minimum grade point average in program	Pass specific academic courses, different from graduation requirements
Business and marketing occupations					
Accountant/bookkeeper	46	28	81	34	17
Administrative assistant/secretary	50	22	86	34	16
Restaurant/food service manager	55	23	80	31	—
Sales associate	45	27	76	34	—
Technical occupations					
Computer programmer	53	21	83	29	—
Computer graphics designer	50	—	75	31	—
Computer/electronics technician	68	23	81	31	—
Engineering technician	—	—	—	—	—
Drafter or CADD operator	41	23	80	24	16
Mechanical occupations					
AC/heating/refrigeration repair technician	70	—	85	—	—
Auto body repairer	72	—	85	39	—
Automotive mechanic/technician	61	26	78	30	—
Machinist	61	—	88	—	—
Building trades					
Bricklayer or mason	64	—	90	—	—
Carpenter	55	28	82	26	10
Electrician	57	19	84	35	—
Plumber	60	—	90	—	—
Welder	50	27	79	27	12
Health/life sciences occupations					
Emergency medical technician	51	52	71	45	—
Medical or dental assistant	62	33	80	41	—
Nurse or nurses' aide	62	36	81	43	23
Medical/life science lab technician	55	—	81	—	—
Agriscience technician	38	31	81	28	—
Veterinary assistant	48	—	83	49	—
Service occupations					
Chef/cook	53	26	83	32	13
Cosmetologist	63	24	83	42	—
Childcare worker or teachers' aide	54	29	80	43	—
Paralegal/legal assistant	—	—	—	—	—

Table 14.—Percent of public secondary schools offering each listed occupational program that do or do not prepare program students for a vocational/occupational skill certificate, by criterion used to determine whether a student is a program completer: 1999 (continued)

Public secondary schools that offer program for:	Program prepares students to earn a skill certificate?				
	No				
	All schools with program	Criterion used to determine whether a student is a program completer:			
		End of program exam	Pass specific vocational courses	Minimum grade point average in program	Pass specific academic courses, different from graduation requirements
Business and marketing occupations					
Accountant/bookkeeper	54	28	80	15	13
Administrative assistant/secretary	50	16	85	20	11
Restaurant/food service manager	45	21	79	36	16
Sales associate	55	17	85	24	15
Technical occupations					
Computer programmer	47	31	—	22	—
Computer graphics designer	50	11	79	26	10
Computer/electronics technician	32	22	71	37	8
Engineering technician	—	—	—	—	—
Drafter or CADD operator	59	31	77	16	6
Mechanical occupations					
AC/heating/refrigeration repair technician	30	—	—	—	—
Auto body repairer	28	21	—	—	16
Automotive mechanic/technician	40	30	77	22	—
Machinist	40	35	—	15	7
Building trades					
Bricklayer or mason	36	34	—	9	21
Carpenter	45	20	81	22	13
Electrician	43	18	—	20	27
Plumber	40	24	—	18	30
Welder	50	26	82	21	14
Health/life sciences occupations					
Emergency medical technician	49	29	—	30	28
Medical or dental assistant	38	24	—	14	22
Nurse or nurses' aide	38	34	71	18	14
Medical/life science lab technician	45	36	—	16	30
Agriscience technician	62	22	—	22	4
Veterinary assistant	52	17	—	21	10
Service occupations					
Chef/cook	47	24	80	20	12
Cosmetologist	38	29	—	14	5
Childcare worker or teachers' aide	46	28	79	23	10
Paralegal/legal assistant	—	—	—	—	—

— Too few cases for reliable estimate.

NOTE: Sum of totals may not sum to 100 because of rounding. Sum of subtotals may exceed 100 because multiple answers were allowed. Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 14a.—Standard errors of percent of public secondary schools offering each listed occupational program that do or do not prepare program students for a vocational/occupational skill certificate, by criterion used to determine whether student is a program completer: 1999

Public secondary schools that offer program for:	Program prepares students to earn a skill certificate?				
	Yes				
	All schools with program	Criterion used to determine whether a student is a program completer:			
		End of program exam	Pass specific vocational courses	Minimum grade point average in program	Pass specific academic courses, different from graduation requirements
Business and marketing occupations					
Accountant/bookkeeper	2.9	4.1	3.8	4.5	3.0
Administrative assistant/secretary	3.0	3.4	3.2	4.4	3.2
Restaurant/food service manager	6.1	4.6	3.9	5.7	—
Sales associate	4.2	5.2	6.0	4.9	—
Technical occupations					
Computer programmer	6.5	5.4	6.4	6.7	—
Computer graphics designer	4.5	—	4.7	5.4	—
Computer/electronics technician	4.0	3.8	4.4	4.5	—
Engineering technician	—	—	—	—	—
Drafter or CADD operator	3.4	4.1	4.7	4.6	4.7
Mechanical occupations					
AC/heating/refrigeration repair technician	7.2	—	5.7	—	—
Auto body repairer	6.5	—	3.5	4.9	—
Automotive mechanic/technician	3.6	3.3	3.9	4.4	—
Machinist	5.8	—	3.2	—	—
Building trades					
Bricklayer or mason	7.0	—	3.1	—	—
Carpenter	3.7	4.3	4.1	4.0	2.7
Electrician	5.6	4.4	5.5	4.7	—
Plumber	6.4	—	3.6	—	—
Welder	4.6	4.3	3.8	4.0	3.0
Health/life sciences occupations					
Emergency medical technician	5.2	7.3	7.0	7.8	—
Medical or dental assistant	5.9	6.0	4.0	6.5	—
Nurse or nurses' aide	3.8	3.5	3.6	4.3	3.9
Medical/life science lab technician	9.1	—	7.9	—	—
Agriscience technician	7.1	9.6	5.3	10.2	—
Veterinary assistant	7.7	—	6.8	10.8	—
Service occupations					
Chef/cook	4.9	4.8	4.1	5.9	2.5
Cosmetologist	5.1	5.1	3.9	5.8	—
Childcare worker or teachers' aide	5.2	5.4	4.3	6.8	—
Paralegal/legal assistant	—	—	—	—	—

Table 14a.—Standard errors of percent of public secondary schools offering each listed occupational program that do or do not prepare program students for a vocational/occupational skill certificate, by criterion used to determine whether student is a program completer: 1999 (continued)

Public secondary schools that offer program for:	Program prepares students to earn a skill certificate?				
	No				
	All schools with program	Criterion used to determine whether a student is a program completer:			
		End of program exam	Pass specific vocational courses	Minimum grade point average in program	Pass specific academic courses, different from graduation requirements
Business and marketing occupations					
Accountant/bookkeeper	2.9	4.3	3.8	2.5	3.4
Administrative assistant/secretary	3.0	3.4	3.8	3.4	3.1
Restaurant/food service manager	6.1	5.4	6.5	5.4	6.6
Sales associate	4.2	4.4	4.4	5.6	4.4
Technical occupations					
Computer programmer	6.5	6.5	—	9.0	—
Computer graphics designer	4.5	4.5	6.2	6.9	6.5
Computer/electronics technician	4.0	6.7	10.9	11.7	5.0
Engineering technician	—	—	—	—	—
Drafter or CADD operator	3.4	5.2	5.4	3.9	3.0
Mechanical occupations					
AC/heating/refrigeration repair technician	7.2	—	—	—	—
Auto body repairer	6.5	11.1	—	—	14.2
Automotive mechanic/technician	3.6	5.7	5.6	4.8	—
Machinist	5.8	10.7	—	6.0	4.3
Building trades					
Bricklayer or mason	7.0	11.3	—	5.4	10.9
Carpenter	3.7	5.3	6.3	4.1	4.4
Electrician	5.6	8.4	—	8.1	9.3
Plumber	6.4	10.8	—	8.7	11.8
Welder	4.6	6.7	5.7	4.7	5.2
Health/life sciences occupations					
Emergency medical technician	5.2	9.0	—	10.7	8.9
Medical or dental assistant	5.9	8.4	—	8.3	8.1
Nurse or nurses' aide	3.8	5.8	6.9	4.9	4.6
Medical/life science lab technician	9.1	12.7	—	10.7	10.9
Agriscience technician	7.1	5.4	—	5.9	2.8
Veterinary assistant	7.7	8.3	—	9.5	6.8
Service occupations					
Chef/cook	4.9	4.5	4.3	4.9	5.2
Cosmetologist	5.1	7.9	—	7.6	3.5
Childcare worker or teachers' aide	5.2	5.9	5.8	5.5	4.7
Paralegal/legal assistant	—	—	—	—	—

— Too few cases for reliable estimate.

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 15.—Percent of public secondary schools offering each listed occupational program that have or have not developed or adopted skill competency lists for the program, by whether criteria are used to identify program completers : 1999

Public secondary schools that offer program for:	A skill competency list has been developed or adopted for program?					
	Yes			No		
	All schools with program	Criteria used to identify program completers?		All schools with program	Criteria used to identify program completers?	
		Yes	No		Yes	No
Business and marketing occupations						
Accountant/bookkeeper	88	83	17	12	80	20
Administrative assistant/secretary	89	89	11	11	88	12
Restaurant/food service manager	94	90	—	6	58	—
Sales associate	89	90	—	11	81	—
Technical occupations						
Computer programmer	90	89	—	10	56	—
Computer graphics designer	84	87	—	16	87	—
Computer/electronics technician	88	90	—	12	80	—
Engineering technician	91	100	—	—	—	—
Drafter or CADD operator	88	83	17	12	68	32
Mechanical occupations						
AC/heating/refrigeration repair technician	99	94	—	—	—	—
Auto body repairer	85	90	—	15	68	—
Automotive mechanic/technician	95	90	10	5	65	35
Machinist	91	90	—	9	84	—
Building trades						
Bricklayer or mason	93	85	—	7	100	—
Carpenter	87	88	12	13	91	9
Electrician	81	88	—	19	96	—
Plumber	87	93	—	13	100	—
Welder	85	83	17	15	73	27
Health/life sciences occupations						
Emergency medical technician	95	89	—	5	100	—
Medical or dental assistant	96	91	—	4	100	—
Nurse or nurses' aide	97	92	—	3	100	—
Medical/life science lab technician	90	93	—	10	100	—
Agriscience technician	94	86	14	6	44	56
Veterinary assistant	97	93	—	—	—	—
Service occupations						
Chef/cook	91	88	12	9	95	—
Cosmetologist	98	91	—	2	100	—
Childcare worker or teachers' aide	91	85	15	9	70	30
Paralegal/legal assistant	90	84	—	—	—	—

— Too few cases for reliable estimate.

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 15a.—Standard errors of the percent of public secondary schools offering each listed occupational program that have or have not developed or adopted skill competency lists for the program, by whether criteria are used to identify program completers : 1999

Public secondary schools that offer program for:	A skill competency list has been developed or adopted for program?					
	Yes			No		
	All schools with program	Criteria used to identify program completers?		All schools with program	Criteria used to identify program completers?	
		Yes	No		Yes	No
Business and marketing occupations						
Accountant/bookkeeper	2.1	2.4	2.4	2.1	7.2	7.2
Administrative assistant/secretary	2.6	2.4	2.4	2.6	6.3	6.3
Restaurant/food service manager	2.7	3.7	—	2.7	39.4	—
Sales associate	3.2	3.2	—	3.2	18.8	—
Technical occupations						
Computer programmer	3.6	4.9	—	3.6	19.7	—
Computer graphics designer	3.1	4.5	—	3.1	8.9	—
Computer/electronics technician	3.5	3.1	—	3.5	13.9	—
Engineering technician	8.3	0.0	—	—	—	—
Drafter or CADD operator	2.6	3.0	3.0	2.6	10.4	10.4
Mechanical occupations						
AC/heating/refrigeration repair technician	0.3	3.4	—	—	0.0	—
Auto body repairer	5.0	3.1	—	5.0	23.4	—
Automotive mechanic/technician	1.6	2.2	2.2	1.6	24.3	24.3
Machinist	3.4	3.5	—	3.4	16.6	—
Building trades						
Bricklayer or mason	3.6	5.5	—	3.6	0.0	—
Carpenter	3.1	2.4	2.4	3.1	6.2	6.2
Electrician	5.0	3.9	—	5.0	4.4	—
Plumber	5.7	4.2	—	5.7	0.0	—
Welder	3.1	3.4	3.4	3.1	11.4	11.4
Health/life sciences occupations						
Emergency medical technician	3.1	3.7	—	3.1	0.0	—
Medical or dental assistant	2.4	3.4	—	2.4	0.0	—
Nurse or nurses' aide	1.3	2.3	—	1.3	0.0	—
Medical/life science lab technician	5.1	3.7	—	5.1	0.0	—
Agriscience technician	3.0	4.7	4.7	3.0	39.6	39.6
Veterinary assistant	2.1	3.5	—	—	—	—
Service occupations						
Chef/cook	2.9	3.3	3.3	2.9	5.7	—
Cosmetologist	1.2	3.1	—	1.2	0.0	—
Childcare worker or teachers' aide	3.2	5.0	5.0	3.2	16.0	16.0
Paralegal/legal assistant	6.9	10.3	—	—	—	—

— Too few cases for reliable estimate.

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 16.—Percent of public secondary schools offering each listed occupational program that do or do not use criteria to identify program completers, by level of educator and industry involvement in developing or adopting skill competency list for program: 1999

Public secondary schools that offer program for:	Criteria used to identify program completers?				
	Yes				
		Level of educator or industry involvement in developing or adopting competency list for program			
	All schools with program	Done exclusively by educators	Done primarily by educators with industry input	Done with about equal educator and industry input	Done primarily/ exclusively by industry
Business and marketing occupations					
Accountant/bookkeeper	83	24	49	27	—
Administrative assistant/secretary	89	14	57	28	—
Restaurant/food service manager	90	12	52	34	—
Sales associate	90	9	64	25	2
Technical occupations					
Computer programmer	89	20	49	29	—
Computer graphics designer	87	14	55	29	—
Computer/electronics technician	90	7	56	32	5
Engineering technician	100	—	49	36	—
Drafter or CADD operator	83	19	49	29	2
Mechanical occupations					
AC/heating/refrigeration repair technician	94	—	53	39	—
Auto body repairer	90	11	56	32	—
Automotive mechanic/technician	90	12	51	33	4
Machinist	90	8	52	36	4
Building trades					
Bricklayer or mason	85	8	50	41	—
Carpenter	88	14	57	27	2
Electrician	88	7	59	32	—
Plumber	93	—	60	37	—
Welder	82	16	52	30	3
Health/life sciences occupations					
Emergency medical technician	89	—	45	45	7
Medical or dental assistant	91	—	52	42	—
Nurse or nurses' aide	92	4	43	45	9
Medical/life science lab technician	93	—	31	56	—
Agriscience technician	87	23	41	36	—
Veterinary assistant	93	21	31	48	—
Service occupations					
Chef/cook	88	17	50	32	—
Cosmetologist	91	5	36	45	14
Childcare worker or teachers' aide	85	14	53	31	2
Paralegal/legal assistant	84	—	40	58	—

Table 16.—Percent of public secondary schools offering each listed occupational program that do or do not use criteria to identify program completers, by level of educator and industry involvement in developing or adopting skill competency list for program: 1999 (continued)

Public secondary schools that offer program for:	Criteria used to identify program completers?				
	No				
	All schools with program	Level of educator or industry involvement in developing or adopting competency list for program:			
		Done exclusively by educators	Done primarily by educators with industry input	Done with about equal educator and industry input	Done primarily/ exclusively by industry
The listed program in the area:					
Business and marketing occupations					
Accountant/bookkeeper	17	50	37	12	—
Administrative assistant/secretary	11	38	53	10	—
Restaurant/food service manager	—	—	—	—	—
Sales associate	—	—	—	—	—
Technical occupations					
Computer programmer	—	—	—	—	—
Computer graphics designer	—	—	—	—	—
Computer/electronics technician	—	—	—	—	—
Engineering technician	—	—	—	—	—
Drafter or CADD operator	17	50	37	13	—
Mechanical occupations					
AC/heating/refrigeration repair technician	—	—	—	—	—
Auto body repairer	—	—	—	—	—
Automotive mechanic/technician	10	51	30	18	—
Machinist	—	—	—	—	—
Building trades					
Bricklayer or mason	—	—	—	—	—
Carpenter	12	49	34	14	—
Electrician	—	—	—	12	—
Plumber	—	—	—	—	—
Welder	18	67	—	28	—
Health/life sciences occupations					
Emergency medical technician	—	—	—	—	—
Medical or dental assistant	—	—	—	—	—
Nurse or nurses' aide	—	—	—	—	—
Medical/life science lab technician	—	—	—	—	—
Agriscience technician	—	—	—	—	—
Veterinary assistant	—	—	—	—	—
Service occupations					
Chef/cook	12	50	40	10	—
Cosmetologist	—	—	—	—	—
Childcare worker or teachers' aide	15	44	37	19	—
Paralegal/legal assistant	—	—	—	—	—

— Too few cases for reliable estimate.

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 16a.—Standard errors of the percent of public secondary schools offering each listed occupational program that do or do not use criteria to identify program completers, by level of educator and industry involvement in developing or adopting skill competency list for program: 1999

Public secondary schools that offer program for:	Criteria used to identify program completers?				
	Yes				
	All schools with program	Level of educator or industry involvement in developing or adopting competency list for program			
		Done exclusively by educators	Done primarily by educators with industry input	Done with about equal educator and industry input	Done primarily/ exclusively by industry
Business and marketing occupations					
Accountant/bookkeeper	2.4	2.2	3.8	3.8	—
Administrative assistant/secretary	2.4	1.9	4.4	3.5	—
Restaurant/food service manager	3.7	2.6	5.4	4.7	—
Sales associate	3.2	2.5	4.0	3.3	1.4
Technical occupations					
Computer programmer	4.9	4.8	7.4	5.6	—
Computer graphics designer	4.5	3.0	5.1	4.3	—
Computer/electronics technician	3.1	1.9	5.0	4.1	1.9
Engineering technician	0.0	—	8.1	8.2	—
Drafter or CADD operator	3.0	2.8	3.6	3.6	1.0
Mechanical occupations					
AC/heating/refrigeration repair technician	3.4	—	5.9	5.3	—
Auto body repairer	3.2	4.2	5.0	4.5	—
Automotive mechanic/technician	2.2	2.6	3.8	3.7	1.5
Machinist	3.5	2.6	5.2	4.0	1.8
Building trades					
Bricklayer or mason	5.5	2.5	6.8	6.9	—
Carpenter	2.4	2.0	4.1	2.8	0.8
Electrician	3.9	2.1	5.1	4.0	—
Plumber	4.2	—	7.9	7.7	—
Welder	3.4	3.4	3.3	4.0	1.4
Health/life sciences occupations					
Emergency medical technician	3.7	—	6.4	5.9	3.1
Medical or dental assistant	3.5	—	4.9	4.5	—
Nurse or nurses' aide	2.3	1.1	2.9	3.5	2.3
Medical/life science lab technician	3.7	—	6.9	8.5	—
Agriscience technician	4.9	4.8	6.2	5.4	—
Veterinary assistant	3.5	7.0	7.5	8.8	—
Service occupations					
Chef/cook	3.3	2.5	4.2	4.3	—
Cosmetologist	3.1	1.4	4.5	4.4	3.0
Childcare worker or teachers' aide	5.1	2.8	5.4	2.7	1.3
Paralegal/legal assistant	10.3	—	13.5	13.7	—

Table 16a.—Standard errors of the percent of public secondary schools offering each listed occupational program that do or do not use criteria to identify program completers, by level of educator and industry involvement in developing or adopting skill competency list for program: 1999 (continued)

Public secondary schools that offer program for:	Criteria used to identify program completers?				
	No				
	All schools with program	Level of educator or industry involvement in developing or adopting competency list for program:			
		Done exclusively by educators	Done primarily by educators with industry input	Done with about equal educator and industry input	Done primarily/ exclusively by industry
Business and marketing occupations					
Accountant/bookkeeper	2.4	8.2	8.4	4.4	—
Administrative assistant/secretary	2.4	11.9	14.7	5.5	—
Restaurant/food service manager	—	—	—	—	—
Sales associate	—	—	—	—	—
Technical occupations					
Computer programmer	—	—	—	—	—
Computer graphics designer	—	—	—	—	—
Computer/electronics technician	—	—	—	—	—
Engineering technician	—	—	—	—	—
Drafter or CADD operator	3.0	25.7	8.5	6.2	—
Mechanical occupations					
AC/heating/refrigeration repair technician	—	—	—	—	—
Auto body repairer	—	—	—	—	—
Automotive mechanic/technician	2.2	10.3	14.4	8.9	—
Machinist	—	—	—	—	—
Building trades					
Bricklayer or mason	—	—	—	—	—
Carpenter	2.4	11.4	10.7	6.5	—
Electrician	—	—	—	—	—
Plumber	—	—	—	—	—
Welder	3.4	10.2	—	8.8	—
Health/life sciences occupations					
Emergency medical technician	—	—	—	—	—
Medical or dental assistant	—	—	—	—	—
Nurse or nurses' aide	—	—	—	—	—
Medical/life science lab technician	—	—	—	—	—
Agriscience technician	—	—	—	—	—
Veterinary assistant	—	—	—	—	—
Service occupations					
Chef/cook	3.3	14.9	15.5	7.5	—
Cosmetologist	—	—	—	—	—
Childcare worker or teachers' aide	5.1	11.6	11.4	8.1	—
Paralegal/legal assistant	—	—	—	—	—

— Too few cases for reliable estimate.

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 17.—Percent of public secondary schools offering each listed occupational program that do or do not prepare program students to earn a vocational/occupational skill certificate, by whether criteria are used to identify program completers: 1999

Public secondary schools that offer program for:	Program prepares students to earn a skill certificate?					
	Yes			No		
	All schools with program	Criteria used to identify program completers?		All schools with program	Criteria used to identify program completers?	
		Yes	No		Yes	No
Business and marketing occupations						
Accountant/bookkeeper	43	90	10	57	78	22
Administrative assistant/secretary	48	92	8	52	86	14
Restaurant/food service manager	52	94	6	48	86	14
Sales associate	44	91	9	56	88	12
Technical occupations						
Computer programmer	51	89	11	49	81	19
Computer graphics designer	49	89	11	51	86	14
Computer/electronics technician	65	92	8	35	82	18
Engineering technician	—	—	—	—	—	—
Drafter or CADD operator	37	89	11	63	76	24
Mechanical occupations						
AC/heating/refrigeration repair technician	72	92	—	28	100	—
Auto body repairer	69	91	9	31	78	22
Automotive mechanic/technician	59	91	9	41	85	15
Machinist	61	90	10	39	88	12
Building trades						
Bricklayer or mason	61	91	9	39	78	22
Carpenter	51	95	5	49	81	14
Electrician	54	95	5	46	82	18
Plumber	57	100	—	43	86	14
Welder	46	87	13	54	75	25
Health/life sciences occupations						
Emergency medical technician	51	90	10	49	93	—
Medical or dental assistant	62	93	7	38	92	—
Nurse or nurses' aide	63	90	10	37	96	4
Medical/life science lab technician	—	—	—	—	—	—
Agriscience technician	33	96	—	67	79	21
Veterinary assistant	44	98	—	56	89	11
Service occupations						
Chef/cook	53	89	11	47	88	12
Cosmetologist	63	91	9	37	91	9
Childcare worker or teachers' aide	50	90	10	50	78	22
Paralegal/legal assistant	—	—	—	—	—	—

— Too few cases for reliable estimate.

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 17a.—Standard errors of the percent of public secondary schools offering each listed occupational program that do or do not prepare program students to earn a vocational/occupational skill certificate, by whether criteria are used to identify program completers: 1999

Public secondary schools that offer program for:	Program prepares students to earn a skill certificate?					
	Yes			No		
	All schools with program	Criteria used to identify program completers?		All schools with program	Criteria used to identify program completers?	
		Yes	No		Yes	No
Business and marketing occupations						
Accountant/bookkeeper	2.7	3.7	3.7	2.7	3.3	3.3
Administrative assistant/secretary	3.1	2.9	2.9	3.1	3.7	3.7
Restaurant/food service manager	6.0	3.6	3.6	6.0	5.6	5.6
Sales associate	4.1	5.0	5.0	4.1	3.9	3.9
Technical occupations						
Computer programmer	5.7	6.5	6.5	5.7	5.9	5.9
Computer graphics designer	4.2	5.9	5.9	4.2	6.1	6.1
Computer/electronics technician	3.7	3.0	3.0	3.7	7.5	7.5
Engineering technician	—	—	—	—	—	—
Drafter or CADD operator	2.7	3.6	3.6	2.7	4.4	4.4
Mechanical occupations						
AC/heating/refrigeration repair technician	7.1	4.9	—	7.1	0.0	—
Auto body repairer	5.4	5.0	5.0	5.4	9.9	9.9
Automotive mechanic/technician	3.7	3.9	3.9	3.7	4.7	4.7
Machinist	5.4	4.2	4.2	5.4	6.7	6.7
Building trades						
Bricklayer or mason	6.8	5.4	5.4	6.8	7.2	7.2
Carpenter	3.0	1.7	1.7	3.0	4.9	4.9
Electrician	5.0	2.7	2.7	5.0	6.8	6.8
Plumber	6.7	0.0	—	6.7	8.1	8.1
Welder	3.6	4.4	4.4	3.6	6.0	6.0
Health/life sciences occupations						
Emergency medical technician	5.3	4.4	4.4	5.3	5.4	—
Medical or dental assistant	5.3	3.4	3.4	5.3	4.9	—
Nurse or nurses' aide	3.3	3.0	3.0	3.3	2.5	2.5
Medical/life science lab technician	—	—	—	—	—	—
Agriscience technician	6.3	3.7	—	6.3	6.7	6.7
Veterinary assistant	7.5	1.0	—	7.5	6.0	6.0
Service occupations						
Chef/cook	4.8	4.0	4.0	4.8	4.5	4.5
Cosmetologist	4.5	4.0	4.0	4.5	5.6	5.6
Childcare worker or teachers' aide	4.8	4.0	4.0	4.8	7.9	7.9
Paralegal/legal assistant	—	—	—	—	—	—

— Too few cases for reliable estimate.

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: US Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 18.—Percent of public secondary schools offering each listed occupational program that do or do not prepare program students to earn a vocational/occupational skill certificate, by whether program has developed or adopted skill competency lists: 1999

Public secondary schools that offer program for	Program prepares students to earn a skill certificate?					
	Yes			No		
	All schools with program	A skill competency list has been developed or adopted?		All schools with program	A skill competency list has been developed or adopted?	
		Yes	No		Yes	No
Business and marketing occupations						
Accountant/bookkeeper	43	92	8	57	84	16
Administrative assistant/secretary	48	95	5	52	84	16
Restaurant/food service manager	52	96	—	48	96	—
Sales associate	44	93	7	56	86	14
Technical occupations						
Computer programmer	51	90	10	49	90	10
Computer graphics designer	49	91	9	51	77	23
Computer/electronics technician	66	98	—	34	71	29
Engineering technician	—	—	—	—	—	—
Drafter or CADD operator	38	95	5	62	84	16
Mechanical occupations						
AC/heating/refrigeration repair technician	72	99	—	—	—	—
Auto body repairer	69	93	7	31	66	34
Automotive mechanic/technician	59	96	4	41	93	7
Machinist	61	98	—	39	81	19
Building trades						
Bricklayer or mason	61	97	—	39	87	13
Carpenter	51	97	3	49	79	21
Electrician	54	94	6	46	66	34
Plumber	57	95	—	43	76	24
Welder	46	92	8	54	81	19
Health/life sciences occupations						
Emergency medical technician	52	100	—	48	90	10
Medical or dental assistant	62	100	—	38	88	12
Nurse or nurses' aide	64	99	—	36	94	6
Medical/life science lab technician	—	—	—	—	—	—
Agriscience technician	33	100	—	67	91	9
Veterinary assistant	45	100	—	55	95	5
Service occupations						
Chef/cook	53	98	—	47	86	14
Cosmetologist	63	100	—	37	96	—
Childcare worker or teachers' aide	50	97	3	50	84	16
Paralegal/legal assistant	—	—	—	—	—	—

— Too few cases for reliable estimate

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999

Table 18a.—Standard errors of the percent of public secondary schools offering each listed occupational program that do or do not prepare program students to earn a vocational/occupational skill certificate, by whether program has developed or adopted skill competency lists: 1999

Public secondary schools that offer program for	Program prepares students to earn a skill certificate?					
	Yes			No		
	All schools with program	A skill competency list has been developed or adopted?		All schools with program	A skill competency list has been developed or adopted?	
		Yes	No		Yes	No
Business and marketing occupations						
Accountant/bookkeeper	2.2	2.1	2.1	2.2	3.3	3.3
Administrative assistant/secretary	2.6	1.8	1.8	2.6	4.3	4.3
Restaurant/food service manager	1.5	2.2	—	1.5	2.3	—
Sales associate	3.3	4.7	4.7	3.3	4.5	4.5
Technical occupations						
Computer programmer	3.7	4.2	4.2	3.7	5.2	5.2
Computer graphics designer	3.2	3.3	3.3	3.2	6.2	6.2
Computer/electronics technician	1.6	1.6	—	1.6	8.8	8.8
Engineering technician	—	—	—	—	—	—
Drafter or CADD operator	2.6	2.0	2.0	2.6	4.0	4.0
Mechanical occupations						
AC/heating/refrigeration repair technician	0.3	0.4	—	—	—	—
Auto body repairer	5.0	4.8	4.8	5.0	11.9	11.9
Automotive mechanic/technician	1.6	2.3	2.3	1.6	2.9	2.9
Machinist	3.5	1.8	—	3.5	7.2	7.2
Building trades						
Bricklayer or mason	3.6	3.4	—	3.6	8.3	8.3
Carpenter	3.1	1.5	1.5	3.1	5.6	5.6
Electrician	5.0	3.1	3.1	5.0	9.0	9.0
Plumber	5.7	4.1	—	5.7	11.9	11.9
Welder	3.1	4.5	4.5	3.1	4.9	4.9
Health/life sciences occupations						
Emergency medical technician	3.1	0.0	—	3.1	6.8	6.8
Medical or dental assistant	2.4	0.0	—	2.4	6.5	6.5
Nurse or nurses' aide	1.3	1.3	—	1.3	2.8	2.8
Medical/life science lab technician	—	—	—	—	—	—
Agriscience technician	3.1	0.0	—	3.1	4.8	4.8
Veterinary assistant	2.0	0.0	—	2.0	3.7	3.7
Service occupations						
Chef/cook	2.8	1.5	—	2.8	5.0	5.0
Cosmetologist	1.2	0.0	—	1.2	3.2	—
Childcare worker or teachers' aide	3.3	1.9	1.9	3.3	5.5	5.5
Paralegal/legal assistant	—	—	—	—	—	—

— Too few cases for reliable estimate

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 19.—Percent of public secondary schools offering each listed occupational program that use any criteria within program to identify program completers, by whether program prepares students to earn a vocational/occupational skill certificate: 1999

Public secondary schools that offer program for:	Criteria used to identify program completers?					
	Yes			No		
	All schools with program	Program prepares students to earn a skill certificate?		All schools with program	Program prepares students to earn a skill certificate?	
		Yes	No		Yes	No
Business and marketing occupations						
Accountant/bookkeeper	83	46	54	17	26	74
Administrative assistant/secretary	89	50	50	11	33	67
Restaurant/food service manager	90	55	45	10	32	68
Sales associate	89	45	55	11	36	64
Technical occupations						
Computer programmer	85	53	47	15	37	63
Computer graphics designer	87	50	50	13	43	57
Computer/electronics technician	89	68	32	11	44	56
Engineering technician	—	—	—	—	—	—
Drafter or CADD operator	81	41	59	19	22	78
Mechanical occupations						
AC/heating/refrigeration repair technician	94	70	30	—	—	—
Auto body repairer	87	72	28	13	49	51
Automotive mechanic/technician	88	61	39	12	47	53
Machinist	89	61	39	11	56	44
Building trades						
Bricklayer or mason	86	64	36	14	38	62
Carpenter	88	55	45	12	22	78
Electrician	89	57	43	11	23	77
Plumber	94	60	40	6	—	97
Welder	81	50	50	19	31	69
Health/life sciences occupations						
Emergency medical technician	92	51	49	8	59	—
Medical or dental assistant	92	62	38	8	60	—
Nurse or nurses' aide	92	62	38	8	79	21
Medical/life science lab technician	—	—	—	—	—	—
Agriscience technician	85	38	62	15	—	92
Veterinary assistant	93	47	53	7	—	90
Service occupations						
Chef/cook	89	53	47	11	50	50
Cosmetologist	91	63	37	9	64	36
Childcare worker or teachers' aide	84	54	46	16	30	70
Paralegal/legal assistant	—	—	—	—	—	—

— Too few cases for reliable estimate.

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 19a.—Standard errors of the percent of public secondary schools offering each listed occupational program that use any criteria within program to identify program completers, by whether program prepares students to earn a vocational/occupational skill certificate: 1999

Public secondary schools that offer program for:	Criteria used to identify program completers?					
	Yes			No		
	All schools with program	Program prepares students to earn a skill certificate?		All schools with program	Program prepares students to earn a skill certificate?	
		Yes	No		Yes	No
Business and marketing occupations						
Accountant/bookkeeper	2.6	2.9	2.9	2.6	8.0	8.0
Administrative assistant/secretary	2.2	3.1	3.1	2.2	12.4	12.4
Restaurant/food service manager	3.7	6.1	6.1	3.7	15.3	15.3
Sales associate	3.2	4.3	4.3	3.2	16.8	16.8
Technical occupations						
Computer programmer	4.6	6.5	6.5	4.6	18.1	18.1
Computer graphics designer	4.0	4.4	4.4	4.0	20.8	20.8
Computer/electronics technician	3.5	3.9	3.9	3.5	15.2	15.2
Engineering technician	—	—	—	—	—	—
Drafter or CADD operator	3.4	3.4	3.4	3.4	5.7	5.7
Mechanical occupations						
AC/heating/refrigeration repair technician	3.6	7.2	7.2	—	—	—
Auto body repairer	4.0	6.5	6.5	4.0	21.9	21.9
Automotive mechanic/technician	2.7	3.7	3.7	2.7	16.8	16.8
Machinist	3.4	5.8	5.8	3.4	21.2	21.2
Building trades occupations						
Bricklayer or mason	5.2	7.0	7.0	5.2	20.0	20.0
Carpenter	2.3	3.7	3.7	2.3	7.9	7.9
Electrician	3.2	5.6	5.6	3.2	14.2	14.2
Plumber	3.6	6.4	6.4	3.6	—	3.6
Welder	3.9	4.6	4.6	3.9	9.3	9.3
Health/life sciences occupations						
Emergency medical technician	3.3	5.0	5.0	3.3	31.4	—
Medical or dental assistant	2.6	5.8	5.8	2.6	22.2	—
Nurse or nurses' aide	2.3	3.8	3.8	2.3	9.2	9.2
Medical/life science lab technician	—	—	—	—	—	—
Agriscience technician	5.0	7.1	7.1	5.0	—	8.2
Veterinary assistant	3.5	7.7	7.7	3.5	—	9.3
Service occupations						
Chef/cook	3.1	4.9	4.9	3.1	14.9	14.9
Cosmetologist	3.1	5.1	5.1	3.1	21.5	21.5
Childcare worker or teachers' aide	4.6	5.1	5.1	4.6	13.4	13.4
Paralegal/legal assistant	—	—	—	—	—	—

— Too few cases for reliable estimate.

NOTE: Estimates are based on public secondary schools with 11th and 12th grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on Vocational Programs in Secondary Schools, 1999.

Table 20.—Distribution of less-than-4-year postsecondary institutions that offer at least one listed occupational program, by broad program area and specific program: 1999

Institutions that offer:	All institutions	2-year		Less-than-2-year	
	Number	Number	Percent of all institutions that offer programs	Number	Percent of all institutions that offer programs
At least one of the listed programs	3,277	1,832	56	1,445	44
At least one of the listed programs for:					
Business and marketing occupations	1,950	1,568	80	382	20
Technical occupations	1,723	1,402	81	321	19
Mechanical occupations	1,072	910	85	162	15
Building trades	997	835	84	162	16
Health/life sciences occupations	1,991	1,474	74	517	26
Service occupations	2,108	1,225	58	883	42
The listed program for:					
Business and marketing occupations					
Accountant/bookkeeper	1,608	1,407	87	201	13
Administrative assistant/secretary	1,749	1,410	81	339	19
Restaurant/food service manager	469	431	92	38	8
Sales associate	598	577	97	21	4
Technical occupations					
Computer programmer	969	879	91	90	9
Computer graphics designer	692	616	89	76	11
Computer technician	1,200	987	82	213	18
Electronics technician	1,036	917	89	119	11
Engineering technician	384	371	97	13	3
Drafter or CADD operator	975	870	89	105	11
Mechanical occupations					
AC/heating/refrigeration repair technician	657	560	85	97	15
Auto body repairer	462	395	85	67	15
Automotive mechanic/technician	902	787	87	115	13
Machinist	614	521	85	93	15
Building trades					
Bricklayer or mason	191	159	83	32	17
Carpenter	496	399	80	97	20
Electrician	627	522	83	105	17
Plumber	291	229	79	62	21
Welder	828	712	86	116	14
Health/life sciences occupations					
Emergency medical technician	766	694	91	72	9
Medical or dental assistant	1,095	744	68	351	32
Nurses aide or home health aide	913	729	80	184	20
Licensed practical nurse	946	760	80	186	20
Registered nurse	776	773	(††)	—	—
Medical/life science lab technician	313	274	87	39	13
Agriscience technician	126	122	96	—	—
Veterinary assistant	89	76	85	13	15
Service occupations					
Chef/cook	425	376	89	49	11
Cosmetologist	1,141	358	31	783	69
Childcare worker	833	777	93	56	7
Teachers' aide	274	263	96	11	4
Paralegal/legal assistant	736	678	92	58	8

†† Estimate greater than or equal to 99.5 percent.

—Too few cases for reliable estimate.

NOTE: Estimates are based on 2-year and less-than-2-year institutions with Title IV eligibility.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Education Institutions, 1999.

Table 20a.—Standard errors of the distribution of less-than-4-year postsecondary institutions that offer at least one listed occupational program, by broad program area and specific program: 1999

Institutions that offer:	All institutions	2-year		Less-than-2-year	
	Number	Number	Percent of all institutions that offer programs	Number	Percent of all institutions that offer programs
At least one of the listed programs	71.7	40.6	0.8	47.4	0.8
At least one of the listed programs for:					
Business and marketing occupations	56.1	51.1	1.1	24.6	1.1
Technical occupations	52.8	49.4	1.6	22.4	1.6
Mechanical occupations	41.5	40.2	1.3	13.8	1.3
Building trades	40.8	40.0	1.3	13.1	1.3
Health/life sciences occupations	57.0	50.7	1.0	22.5	1.0
Service occupations	66.3	45.4	1.4	42.7	1.4
The listed program for:					
Business and marketing occupations					
Accountant/bookkeeper	57.5	54.3	1.0	17.1	1.0
Administrative assistant/secretary	51.5	46.4	1.2	23.7	1.2
Restaurant/food service manager	34.9	33.4	2.0	9.8	2.0
Sales associate	36.9	36.9	0.8	4.5	0.8
Technical occupations					
Computer programmer	47.2	46.1	1.5	14.8	1.5
Computer graphics designer	33.7	32.8	1.8	13.1	1.8
Computer technician	55.6	51.8	1.4	17.9	1.4
Electronics technician	39.7	37.9	0.9	9.7	0.9
Engineering technician	23.2	22.9	1.5	5.7	1.5
Drafter or CADD operator	37.9	36.8	1.0	10.1	1.0
Mechanical occupations					
AC/heating/refrigeration repair technician	35.2	34.5	1.6	10.4	1.6
Auto body repairer	38.9	37.3	1.9	8.6	1.9
Automotive mechanic/technician	41.3	39.9	1.3	11.7	1.3
Machinist	41.5	41.1	1.5	7.7	1.5
Building trades					
Bricklayer or mason	22.6	22.2	3.2	5.5	3.2
Carpenter	35.7	35.9	2.2	9.0	2.2
Electrician	41.3	41.3	1.9	10.5	1.9
Plumber	26.4	27.4	2.8	5.5	2.8
Welder	39.9	38.7	1.4	11.7	1.4
Health/life sciences occupations					
Emergency medical technician	37.2	36.1	1.2	9.6	1.2
Medical or dental assistant	50.8	46.4	2.0	23.0	2.0
Nurses aide or home health aide	44.4	42.4	1.7	15.8	1.7
Licensed practical nurse	42.2	40.3	1.2	10.4	1.2
Registered nurse	33.6	33.5	0.0	—	—
Medical/life science lab technician	28.1	24.8	3.5	11.9	3.5
Agriscience technician	21.9	21.8	2.0	—	—
Veterinary assistant	13.8	13.3	5.0	4.4	5.0
Service occupations					
Chef/cook	33.1	32.1	1.6	6.7	1.6
Cosmetologist	60.9	33.6	2.1	42.8	2.1
Childcare worker	39.2	38.7	1.0	8.4	1.0
Teachers' aide	26.1	26.5	1.5	4.1	1.5
Paralegal/legal assistant	48.9	46.6	1.7	13.0	1.7

—Too few cases for reliable estimate.

NOTE: Estimates are based on 2-year and less-than-2-year institutions with Title IV eligibility.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Education Institutions, 1999.

Table 21.—Distribution of less-than-4-year postsecondary institutions that offer courses in the listed occupational programs on a noncredit basis, by broad program area and specific program: 1999

Institutions that offer noncredit courses in:	All institutions	2-year		Less-than-2-year	
	Number	Number	Percent of institutions that offer noncredit courses	Number	Percent of institutions that offer noncredit courses
At least one of the listed programs	1,511	748	50	763	50
At least one of the listed programs for:					
Business and marketing occupations	594	418	70	176	30
Technical occupations	523	400	76	123	24
Mechanical occupations	413	301	73	112	27
Building trades	594	418	70	176	30
Health/life sciences occupations	748	508	68	240	32
Service occupations	845	325	38	520	62
The listed program for:					
Business and marketing occupations					
Accountant/bookkeeper	365	276	76	89	24
Administrative assistant/secretary	453	302	67	151	33
Restaurant/food service manager	147	122	83	25	17
Sales associate	102	92	91	10	9
Technical occupations					
Computer programmer	216	196	91	20	9
Computer graphics designer	185	154	83	31	17
Computer technician	332	251	76	81	24
Electronics technician	222	164	74	58	26
Engineering technician	54	51	94	—	—
Drafter or CADD operator	300	234	78	66	22
Mechanical occupations					
AC/heating/refrigeration repair technician	252	183	73	69	27
Auto body repairer	164	116	71	48	29
Automotive mechanic/technician	273	196	72	77	28
Machinist	197	129	65	68	35
Building trades					
Bricklayer or mason	95	69	73	26	27
Carpenter	200	134	67	66	33
Electrician	288	215	75	73	25
Plumber	140	93	66	47	34
Welder	317	234	74	83	26
Health/life sciences occupations					
Emergency medical technician	335	288	86	47	14
Medical or dental assistant	230	115	50	115	50
Nurses aide or home health aide	440	331	75	109	25
Licensed practical nurse	221	106	48	115	52
Registered nurse	80	79	98	—	—
Medical/life science lab technician	44	35	80	9	20
Agriscience technician	32	29	89	—	—
Veterinary assistant	19	15	77	—	—
Service occupations					
Chef/cook	149	116	78	33	22
Cosmetologist	547	73	13	474	87
Childcare worker	237	192	81	45	19
Teachers' aide	63	58	92	—	—
Paralegal/legal assistant	120	102	85	18	15

—Too few cases for reliable estimate.

NOTE: Estimates are based on 2-year and less-than-2-year institutions with Title IV eligibility.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Education Institutions 1999.

Table 21a.—Standard errors of the distribution of less-than-4-year postsecondary institutions that offer courses in the listed occupational programs on a noncredit basis, by broad program area and specific program: 1999

Institutions that offer noncredit courses in:	All institutions	2-year		Less-than-2-year	
	Number	Number	Percent of institutions that offer noncredit courses	Number	Percent of institutions that offer noncredit courses
At least one of the listed programs	90.7	55.0	2.2	58.3	2.2
At least one of the listed programs for:					
Business and marketing occupations	40.3	40.8	3.0	14.9	3.0
Technical occupations	42.6	38.7	2.1	11.2	2.1
Mechanical occupations	38.0	36.2	3.3	12.4	3.3
Building trades	43.1	42.7	2.8	9.0	2.8
Health/life sciences occupations	43.3	40.3	2.4	17.2	2.4
Service occupations	69.2	35.9	3.2	52.6	3.2
The listed program for:					
Business and marketing occupations					
Accountant/bookkeeper	36.0	36.6	3.3	8.7	3.3
Administrative assistant/secretary	34.4	34.7	3.5	13.1	3.5
Restaurant/food service manager	23.2	22.4	5.5	8.0	5.5
Sales associate	16.5	16.2	3.3	3.2	3.3
Technical occupations					
Computer programmer	27.8	26.5	2.4	5.4	2.4
Computer graphics designer	25.2	24.0	2.8	4.7	2.8
Computer technician	32.7	30.3	2.9	9.2	2.9
Electronics technician	29.3	25.7	2.9	6.8	2.9
Engineering technician	10.7	10.7	1.2	—	—
Drafter or CADD operator	30.2	28.8	2.7	7.0	2.7
Mechanical occupations					
AC/heating/refrigeration repair technician	26.3	25.0	3.8	8.7	3.8
Auto body repairer	24.0	22.9	5.5	7.7	5.5
Automotive mechanic/technician	26.6	25.3	3.9	8.0	3.9
Machinist	22.9	23.2	4.9	3.2	4.9
Building trades					
Bricklayer or mason	19.0	18.3	6.7	4.7	6.7
Carpenter	25.2	24.3	4.7	6.6	4.7
Electrician	35.2	34.5	3.8	7.7	3.8
Plumber	18.0	18.4	5.5	4.8	5.5
Welder	36.2	35.4	3.7	8.9	3.7
Health/life sciences occupations					
Emergency medical technician	30.8	30.3	2.4	7.7	2.4
Medical or dental assistant	26.6	22.2	6.2	15.8	6.2
Nurses aide or home health aide	31.3	30.3	2.4	9.4	2.4
Licensed practical nurse	27.2	26.1	6.6	7.0	6.6
Registered nurse	15.0	15.0	1.7	—	—
Medical/life science lab technician	11.7	9.1	12.1	5.9	12.1
Agriscience technician	10.9	10.7	8.5	—	—
Veterinary assistant	5.4	5.3	10.0	—	—
Service occupations					
Chef/cook	22.0	21.6	4.6	5.7	4.6
Cosmetologist	58.8	14.5	2.5	54.4	2.5
Childcare worker	25.9	24.3	3.5	8.4	3.5
Teachers' aide	13.1	13.1	3.8	—	—
Paralegal/legal assistant	22.3	21.8	6.7	7.0	6.7

—Too few cases for reliable estimate.

NOTE: Estimates are based on 2-year and less-than-2-year institutions with Title IV eligibility.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Education Institutions, 1999.

Table 22.—Distribution of less-than-4-year postsecondary institutions that offer courses in the listed occupational programs on a for-credit basis, by broad program area and specific program: 1999

Institutions that offer for-credit courses in:	All institutions	2-year		Less-than-2-year	
	Number	Number	Percent of institutions that offer for-credit courses	Number	Percent of institutions that offer for-credit courses
At least one of the listed programs	2,610	1,785	68	825	32
At least one of the listed programs for:					
Business and marketing occupations	1,763	1,532	87	231	13
Technical occupations	1,578	1,360	86	218	14
Mechanical occupations	925	858	93	67	7
Building trades	1,763	1,532	87	231	13
Health/life sciences occupations	1,716	1,399	82	317	18
Service occupations	1,631	1,184	73	447	27
The listed program for:					
Business and marketing occupations					
Accountant/bookkeeper	1,498	1,371	92	127	8
Administrative assistant/secretary	1,565	1,359	87	206	13
Restaurant/food service manager	386	372	96	14	4
Sales associate	566	554	98	12	2
Technical occupations					
Computer programmer	952	875	92	77	8
Computer graphics designer	624	571	91	53	9
Computer technician	1,081	937	87	144	13
Electronics technician	939	871	93	68	7
Engineering technician	379	369	97	10	3
Drafter or CADD operator	870	821	94	49	6
Mechanical occupations					
AC/heating/refrigeration repair technician	519	484	93	35	7
Auto body repairer	361	336	93	25	7
Automotive mechanic/technician	786	736	94	50	6
Machinist	499	466	93	33	7
Building trades					
Bricklayer or mason	134	127	95	—	—
Carpenter	364	326	90	38	10
Electrician	476	438	92	38	8
Plumber	179	162	91	17	9
Welder	668	619	93	49	7
Health/life sciences occupations					
Emergency medical technician	571	538	94	33	6
Medical or dental assistant	955	704	74	251	26
Nurses aide or home health aide	581	491	84	90	16
Licensed practical nurse	792	709	89	83	11
Registered nurse	765	762	(††)	—	—
Medical/life science lab technician	290	260	90	30	10
Agriscience technician	115	112	97	—	—
Veterinary assistant	79	70	89	9	11
Service occupations					
Chef/cook	354	333	94	21	6
Cosmetologist	697	325	47	372	53
Childcare worker	742	718	97	24	3
Teachers' aide	240	233	97	—	—
Paralegal/legal assistant	713	662	93	51	7

†† Estimate greater than or equal to 99.5 percent.

— Too few cases for reliable estimate.

NOTE: Estimates are based on 2-year and less-than-2-year institutions with Title IV eligibility.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Education Institutions, 1999.

Table 22a.—Standard errors of the distribution of less-than-4-year postsecondary institutions that offer courses in the listed occupational programs on a noncredit basis, by broad program area and specific program: 1999

Institutions that offer noncredit courses in:	All institutions	2-year		Less-than-2-year	
	Number	Number	Percent of institutions that offer for-credit courses	Number	Percent of institutions that offer for-credit courses
At least one of the listed programs	86.6	44.2	1.8	67.8	1.8
At least one of the listed programs for:					
Business and marketing occupations	56.9	51.8	1.1	21.8	1.1
Technical occupations	53.2	51.3	1.3	21.2	1.3
Mechanical occupations	40.8	40.4	0.9	8.6	0.9
Building trades	36.7	36.3	1.1	9.1	1.1
Health/life sciences occupations	57.9	50.0	1.1	23.0	1.1
Service occupations	71.6	46.7	2.7	57.3	2.7
The listed program for:					
Business and marketing occupations					
Accountant/bookkeeper	56.0	54.5	1.0	15.6	1.0
Administrative assistant/secretary	50.2	45.7	1.2	20.9	1.2
Restaurant/food service manager	32.4	30.3	1.6	6.3	1.6
Sales associate	36.4	36.3	0.7	3.7	0.7
Technical occupations					
Computer programmer	47.0	46.1	1.5	14.7	1.5
Computer graphics designer	34.6	33.4	2.0	12.7	2.0
Computer technician	56.1	52.7	1.6	17.8	1.6
Electronics technician	39.9	39.0	0.9	8.3	0.9
Engineering technician	23.2	22.9	1.5	5.7	1.5
Drafter or CADD operator	35.8	35.3	0.9	8.0	0.9
Mechanical occupations					
AC/heating/refrigeration repair technician	33.2	32.1	1.3	7.1	1.3
Auto body repairer	33.8	33.1	1.9	6.9	1.9
Automotive mechanic/technician	39.5	39.0	1.0	8.1	1.0
Machinist	38.2	37.9	0.9	4.2	0.9
Building trades					
Bricklayer or mason	19.7	19.7	1.8	—	—
Carpenter	33.5	33.7	2.3	7.7	2.3
Electrician	36.6	36.9	1.3	5.5	1.3
Plumber	23.3	23.4	1.8	2.2	1.8
Welder	33.7	33.5	1.1	7.5	1.1
Health/life sciences occupations					
Emergency medical technician	32.9	31.0	1.5	8.7	1.5
Medical or dental assistant	51.1	45.3	2.2	22.6	2.2
Nurses aide or home health aide	37.8	36.6	2.4	14.3	2.4
Licensed practical nurse	39.2	38.3	1.3	10.5	1.3
Registered nurse	34.4	34.3	0.0	—	—
Medical/life science lab technician	27.3	24.6	3.5	10.9	3.5
Agriscience technician	18.7	18.5	1.9	2.2	1.9
Veterinary assistant	14.0	13.4	5.5	4.4	5.5
Service occupations:					
Chef/cook	30.7	30.3	1.5	5.4	1.5
Cosmetologist	69.8	32.6	3.9	54.4	3.9
Childcare worker	39.5	39.5	0.6	4.3	0.6
Teachers' aide	23.4	23.6	1.5	3.5	1.5
Paralegal/legal assistant	48.0	46.5	1.7	12.7	1.7

—Too few cases for reliable estimate.

NOTE: Estimates are based on 2-year and less-than-2-year institutions with Title IV eligibility.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Education Institutions, 1999.

Table 23.—Percent of less-than-4-year postsecondary institutions that offer occupational programs, by type of institution, broad program area, and specific program: 1999

Institutions that offer:	Percent of all institutions[1]			Percent of institutions with one or more programs[2]		
	All	2-year	Less-than-2-year	All	2 year	Less-than-2- year
At least one of the listed programs	90	88	91	100	100	100
At least one of the listed programs for:						
Business and marketing occupations	53	76	24	60	86	26
Technical occupations	47	68	20	53	77	22
Mechanical occupations	29	44	10	33	50	11
Building trades	27	40	10	30	46	11
Health/life sciences occupations	54	71	33	61	80	36
Service occupations	58	59	56	64	67	61
The listed program for:						
Business and marketing occupations						
Accountant/bookkeeper	44	68	13	49	77	14
Administrative assistant/secretary	48	68	21	53	77	23
Restaurant/food service manager	13	21	2	14	24	3
Sales associate	16	28	1	18	31	1
Technical occupations						
Computer programmer	27	42	6	30	48	6
Computer graphic designer	19	30	5	21	34	5
Computer technician	33	48	13	37	54	15
Electronics technician	28	44	7	32	50	8
Engineering technician	11	18	1	12	20	1
Drafter or CADD operator	27	42	6	30	47	7
Mechanical occupations						
AC/heating/refrigeration repair technician	18	27	6	20	31	7
Auto body repairer	13	19	4	14	22	5
Automotive mechanic/technician	25	38	7	28	43	8
Machinist	17	25	6	19	28	6
Building trades						
Bricklayer or mason	5	8	2	6	9	2
Carpenter	14	19	6	15	22	7
Electrician	17	25	7	19	28	7
Plumber	8	11	4	9	12	4
Welder	23	34	7	25	39	8
Health/life sciences occupations						
Emergency medical technician	21	33	5	23	38	5
Medical or dental assistant	30	36	22	33	41	24
Nurses' aide or home health aide	25	35	12	28	40	13
Licensed practical nurse	26	37	12	29	42	13
Registered nurse	21	37	—	24	42	—
Medical/life science lab technician	9	13	2	10	15	3
Agriscience technician	3	6	—	4	7	—
Veterinary assistant	2	4	1	3	4	1
Service occupations						
Chef/cook	12	18	3	13	21	3
Cosmetologist	31	17	49	35	20	54
Childcare worker	23	37	4	25	42	4
Teachers' aide	8	12	1	8	14	1
Paralegal/legal assistant	20	33	4	22	37	4

— Too few cases for reliable estimate.

[1]Percentages represent the number of institutions with a program among all institutions of that type.

[2]Percentages represent the number of institutions with a program among all institutions of that type that offer at least one listed occupational program.

NOTE: Estimates are based on 2-year and less-than-2-year institutions with Title IV eligibility.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Education Institutions, 1999.

Table 23a.—Standard errors of the percent of less-than-4-year postsecondary institutions that offer occupational programs, by type of institution, broad program area, and specific program: 1999

Institutions that offer:	Percent of all institutions			Percent of institutions with one or more programs		
	All	2-year	Less-than-2-year	All	2-year	Less-than-2-year
At least one of the listed programs	1.1	1.6	1.3	(*)	(*)	(*)
At least one of the listed programs for:						
Business and marketing occupations	1.4	2.1	1.6	1.4	2.0	1.7
Technical occupations	1.4	2.2	1.4	1.3	1.7	1.5
Mechanical occupations	1.1	2.0	0.9	1.1	1.9	1.0
Building trades	1.0	1.9	0.9	1.1	1.9	1.0
Health/life sciences occupations	1.4	2.4	1.5	1.4	2.2	1.6
Service occupations	1.5	2.4	1.7	1.5	2.4	1.7
The listed program for:						
Business and marketing occupations						
Accountant/bookkeeper	1.6	2.7	1.1	1.6	2.7	1.2
Administrative assistant/secretary	1.4	2.3	1.5	1.4	2.2	1.6
Restaurant/food service manager	1.0	1.6	0.6	1.1	1.8	0.7
Sales associate	1.0	1.8	0.3	1.2	2.2	0.3
Technical occupations						
Computer programmer	1.3	2.2	0.9	1.4	2.4	1.0
Computer graphic designer	1.0	1.6	0.8	1.1	1.8	0.9
Computer technician	1.5	2.4	1.1	1.6	2.5	1.2
Electronics technician	1.1	1.9	0.7	1.2	2.1	0.7
Engineering technician	0.6	1.0	0.4	0.7	1.2	0.4
Drafter or CADD operator	1.0	1.8	0.7	1.2	2.0	0.7
Mechanical occupations						
AC/heating/refrigeration repair technician	0.9	1.6	0.7	1.0	1.8	0.8
Auto body repairer	1.0	1.8	0.6	1.2	1.9	0.6
Automotive mechanic/technician	1.1	1.9	0.8	1.1	1.9	0.8
Machinist	1.1	2.0	0.5	1.3	2.3	0.6
Building trades						
Bricklayer or mason	0.6	1.1	0.3	0.7	1.2	0.4
Carpenter	1.0	1.7	0.6	1.1	2.0	0.7
Electrician	1.1	2.0	0.7	1.2	2.1	0.8
Plumber	0.7	1.3	0.4	0.8	1.5	0.4
Welder	1.0	1.8	0.8	1.1	1.9	0.8
Health/life sciences occupations						
Emergency medical technician	1.0	1.7	0.6	1.0	1.7	0.7
Medical or dental assistant	1.4	2.3	1.4	1.5	2.5	1.5
Nurses' aide or home health aide	1.2	2.1	1.1	1.3	2.3	1.2
Licensed practical nurse	1.1	2.0	0.8	1.2	2.0	0.8
Registered nurse	1.1	1.8	—	1.2	2.0	—
Medical/life science lab technician	0.8	1.2	0.8	0.8	1.4	0.8
Agriscience technician	0.6	1.1	—	0.7	1.2	—
Veterinary assistant	0.4	0.7	0.3	0.4	0.7	0.3
Service occupations						
Chef/cook	0.9	1.6	0.4	1.1	1.8	0.5
Cosmetologist	1.4	1.6	1.8	1.5	1.8	1.7
Childcare worker	1.1	2.1	0.5	1.3	2.3	0.6
Teachers' aide	0.7	1.3	0.3	0.8	1.4	0.3
Paralegal/legal assistant	1.4	2.4	0.8	1.5	2.5	0.9

* Not applicable.
— Too few cases for reliable estimate.
NOTE: Estimates are based on 2-year and less-than-2-year institutions with Title IV eligibility.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Education Institutions, 1999.

Table 24.—Percent of less-than-4-year postsecondary institutions that offer noncredit courses in occupational programs, by type of institution, broad program area, and specific program: 1999

Institutions that offer noncredit courses in:	Percent of all institutions[1]			Percent of institutions with one or more programs[2]		
	All	2-year	Less-than-2- year	All	2-year	Less-than-2-year
At least one of the listed programs	41	36	48	46	41	53
At least one of the listed programs for:						
Business and marketing occupations	16	20	11	18	23	12
Technical occupations	14	19	7	16	22	9
Mechanical occupations	11	15	8	13	16	8
Building trades	12	17	7	14	23	12
Health/life sciences occupations	20	25	15	23	28	17
Service occupations	23	16	33	26	18	36
The listed program for:						
Business and marketing occupations						
Accountant/bookkeeper	10	13	6	11	15	6
Administrative assistant/secretary	12	15	10	14	16	10
Restaurant/food service manager	4	6	2	5	7	2
Sales associate	3	4	1	3	5	1
Technical occupations						
Computer programmer	6	9	1	7	11	1
Computer graphic designer	5	7	2	6	8	2
Computer technician	9	12	5	10	14	6
Electronics technician	6	8	4	7	9	4
Engineering technician	2	2	—	2	3	—
Drafter or CADD operator	8	11	4	9	13	5
Mechanical occupations						
AC/heating/refrigeration repair technician	7	9	4	8	10	5
Auto body repairer	5	6	3	5	6	3
Automotive mechanic/technician	8	9	5	8	11	5
Machinist	5	6	4	6	7	5
Building trades						
Bricklayer or mason	3	3	2	3	4	2
Carpenter	6	6	4	6	7	5
Electrician	8	10	5	9	12	5
Plumber	4	4	3	4	5	3
Welder	9	11	5	10	13	6
Health/life sciences occupations						
Emergency medical technician	9	14	3	10	16	3
Medical or dental assistant	6	6	7	7	6	8
Nurses' aide or home health aide	12	16	7	13	18	8
Licensed practical nurse	6	5	7	7	6	8
Registered nurse	2	4	—	2	4	—
Medical/life science lab technician	1	2	1	1	2	1
Agriscience technician	1	1	—	1	2	—
Veterinary assistant	1	1	—	1	1	—
Service occupations						
Chef/cook	4	6	2	5	6	2
Cosmetologist	15	4	30	17	4	3
Childcare worker	7	9	3	7	10	3
Teachers' aide	2	3	—	2	3	—
Paralegal/legal assistant	3	5	1	4	6	1

— Too few cases for reliable estimate.

[1]Percentages represent the number of institutions with a program among all institutions of that type.

[2]Percentages represent the number of institutions with a program among all institutions of that type that offer at least one listed occupational program.

NOTE: Estimates are based on 2-year and less-than-2-year institutions with Title IV eligibility.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Education Institutions, 1999.

Table 24a.—Standard errors of the percent of less-than-4-year postsecondary institutions that offer noncredit courses in occupational programs, by type of institution, broad program area, and specific program: 1999

Institutions that offer noncredit courses in:	Percent of all institutions			Percent of institutions with one or more programs		
	All	2-year	Less-than-2-year	All	2-year	Less-than-2-year
At least one of the listed programs	2.4	2.6	3.5	2.6	2.8	3.9
At least one of the listed programs for:						
Business and marketing occupations	0.9	1.1	2.0	1.2	2.1	1.0
Technical occupations	1.2	1.8	0.7	1.3	2.0	0.8
Mechanical occupations	1.0	1.7	0.8	1.2	1.9	0.9
Building trades	1.2	2.0	0.6	1.3	2.3	0.7
Health/life sciences occupations	1.2	1.9	1.1	1.3	2.1	1.3
Service occupations	1.9	1.8	3.1	2.1	1.9	3.5
The listed program for:						
Business and marketing occupations						
Accountant/bookkeeper	1.0	1.8	0.6	1.1	2.0	0.6
Administrative assistant/secretary	0.9	1.7	0.8	1.1	1.9	0.9
Restaurant/food service manager	0.6	1.1	0.5	0.7	1.2	0.5
Sales associate	0.5	0.8	0.2	0.5	0.9	0.2
Technical occupations						
Computer programmer	0.8	1.3	0.3	0.8	1.4	0.4
Computer graphic designer	0.7	1.1	0.3	0.8	1.3	0.3
Computer technician	0.9	1.4	0.6	1.0	1.6	0.6
Electronics technician	0.8	1.3	0.4	0.9	1.4	0.5
Engineering technician	0.3	0.5	—	0.3	0.6	—
Drafter or CADD operator	0.8	1.4	0.5	0.9	1.6	0.5
Mechanical occupations						
AC/heating/refrigeration repair technician	0.7	1.2	0.6	0.8	1.4	0.6
Auto body repairer	0.7	1.1	0.5	0.7	1.2	0.5
Automotive mechanic/technician	0.7	1.2	0.6	0.8	1.3	0.7
Machinist	0.6	1.1	0.4	0.7	1.3	0.4
Building trades						
Bricklayer or mason	0.5	0.9	0.3	0.6	1.0	0.3
Carpenter	0.7	1.2	0.4	0.8	1.3	0.5
Electrician	1.0	1.7	0.5	1.1	1.8	0.6
Plumber	0.5	0.9	0.3	0.6	1.0	0.3
Welder	0.1	1.7	0.6	1.1	1.9	0.6
Health/life sciences occupations						
Emergency medical technician	0.8	1.4	0.5	0.9	1.5	0.5
Medical or dental assistant	0.7	1.1	1.0	0.8	1.2	1.1
Nurses' aide or home health aide	0.9	1.5	0.6	1.0	1.6	0.7
Licensed practical nurse	0.7	1.3	0.5	0.8	1.4	0.6
Registered nurse	0.4	0.7	—	0.5	0.8	—
Medical/life science lab technician	0.3	0.4	0.4	0.4	0.5	0.4
Agriscience technician	0.3	0.5	—	0.3	0.6	—
Veterinary assistant	0.1	0.3	—	0.2	0.3	—
Service occupations						
Chef/cook	0.6	1.1	0.4	0.7	1.2	0.4
Cosmetologist	1.6	0.7	3.3	1.7	0.8	3.6
Childcare worker	0.7	1.2	0.5	0.8	1.4	0.6
Teachers' aide	0.4	0.6	—	0.4	0.7	—
Paralegal/legal assistant	0.6	1.1	0.5	0.7	1.2	0.6

— Too few cases for reliable estimate.

NOTE: Estimates are based on 2-year and less-than-2-year institutions with Title IV eligibility.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Education Institutions, 1999.

Table 25.—Percent of less-than-4-year postsecondary institutions that offer for-credit courses in occupational programs, by type of institution, broad program area, and specific program: 1999

Institutions that offer for-credit courses in:	Percent of all institutions[1]			Percent of institutions with one or more programs[2]		
	All	2-year	Less-than-2-year	All	2-year	Less-than-2-year
At least one of the listed programs	71	86	52	80	97	57
At least one of the listed programs for:						
Business and marketing occupations	48	74	15	54	84	16
Technical occupations	43	66	14	48	74	15
Mechanical occupations	25	41	4	28	47	5
Building trades	22	36	5	54	84	16
Health/life sciences occupations	47	67	20	52	76	22
Service occupations	45	57	28	50	65	31
The listed program for:						
Business and marketing occupations						
Accountant/bookkeeper	41	66	8	46	75	9
Administrative assistant/secretary	43	66	13	48	74	14
Restaurant/food service manager	11	18	1	12	20	1
Sales associate	16	27	1	17	30	1
Technical occupations						
Computer programmer	26	42	5	29	48	5
Computer graphic designer	17	28	3	19	31	4
Computer technician	30	45	9	33	51	10
Electronics technician	26	42	4	29	48	5
Engineering technician	10	18	1	12	20	1
Drafter or CADD operator	24	40	3	27	45	3
Mechanical occupations						
AC/heating/refrigeration repair technician	14	23	2	16	26	2
Auto body repairer	10	16	2	11	18	2
Automotive mechanic/technician	22	36	3	24	40	3
Machinist	14	22	2	15	25	2
Building trades						
Bricklayer or mason	4	6	—	4	7	—
Carpenter	10	16	2	11	18	3
Electrician	13	21	2	15	24	3
Plumber	5	8	1	5	9	—
Welder	18	30	3	20	34	3
Health/life sciences occupations						
Emergency medical technician	16	26	2	17	29	2
Medical or dental assistant	26	34	16	29	38	17
Nurses' aide or home health aide	16	24	6	18	27	6
Licensed practical nurse	22	34	5	24	39	6
Registered nurse	21	37	—	23	42	—
Medical/life science lab technician	8	13	2	9	14	2
Agriscience technician	3	5	—	4	6	—
Veterinary assistant	2	3	1	2	4	1
Service occupations						
Chef/cook	10	16	1	11	18	1
Cosmetologist	19	16	23	21	18	26
Childcare worker	20	35	2	23	39	2
Teachers' aide	7	11	—	7	13	—
Paralegal/legal assistant	20	32	3	22	36	4

— Too few cases for reliable estimate.

[1]Percentages represent the number of institutions with a program among all institutions of that type.

[2]Percentages represent the number of institutions with a program among all institutions of that type that offer at least one listed occupational program.

NOTE: Estimates are based on 2-year and less-than-2-year institutions with Title IV eligibility.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Education Institutions, 1999.

Table 25a.—Standard errors of the percent of less-than-4-year postsecondary institutions that offer for-credit courses in occupational programs, by type of institution, broad program area, and specific program: 1999

Institutions that offer for-credit courses in:	Percent of all institutions			Percent of institutions with one or more programs		
	All	2-year	Less-than-2-year	All	2-year	Less-than-2-year
At least one of the listed programs	2.0	1.8	3.9	1.9	1.0	4.1
At least one of the listed programs for:						
Business and marketing occupations	1.4	2.1	1.4	1.5	2.1	1.5
Technical occupations	1.3	2.3	1.3	1.3	1.9	1.4
Mechanical occupations	1.1	1.9	0.6	1.1	1.9	0.6
Building trades	0.9	1.7	0.6	0.9	1.6	0.6
Health/life sciences occupations	1.5	2.4	1.5	1.4	2.1	1.6
Service occupations	1.8	2.4	3.4	2.0	2.5	3.7
The listed program for:						
Business and marketing occupations						
Accountant/bookkeeper	1.6	2.7	1.0	1.6	2.8	1.1
Administrative assistant/secretary	1.4	2.2	1.3	1.4	2.2	1.4
Restaurant/food service manager	0.9	1.5	0.4	1.0	1.6	0.4
Sales associate	1.0	1.8	0.2	1.2	2.1	0.3
Technical occupations						
Computer programmer	1.3	2.2	0.9	1.4	2.4	1.0
Computer graphic designer	1.0	1.6	0.8	1.1	1.7	0.9
Computer technician	1.5	2.4	1.1	1.6	2.6	1.2
Electronics technician	1.0	1.8	0.5	1.2	2.1	0.6
Engineering technician	0.6	1.0	0.4	0.7	1.2	0.4
Drafter or CADD operator	0.9	1.7	0.5	1.1	1.9	0.6
Mechanical occupations						
AC/heating/refrigeration repair technician	0.8	1.5	0.5	0.9	1.6	0.5
Auto body repairer	0.9	1.6	0.4	1.0	1.7	0.5
Automotive mechanic/technician	1.0	1.8	0.5	1.1	1.9	0.6
Machinist	1.0	1.8	0.3	1.1	2.1	0.3
Building trades						
Bricklayer or mason	0.5	0.9	—	0.6	1.0	—
Carpenter	0.9	1.6	0.5	1.0	1.8	0.5
Electrician	0.9	1.7	0.4	1.0	1.9	0.4
Plumber	0.6	1.1	0.1	0.7	1.3	—
Welder	0.8	1.5	0.5	0.9	1.6	0.5
Health/life sciences occupations						
Emergency medical technician	0.9	1.5	0.5	1.0	1.7	0.6
Medical or dental assistant	1.4	2.2	1.4	1.5	2.4	1.5
Nurses' aide or home health aide	1.0	1.7	0.9	1.1	2.0	1.0
Licensed practical nurse	1.1	1.9	0.7	1.2	2.0	0.8
Registered nurse	1.1	1.8	—	1.2	2.0	—
Medical/life science lab technician	0.7	1.2	0.7	0.8	1.4	0.7
Agriscience technician	0.5	0.9	—	0.6	1.0	—
Veterinary assistant	0.4	0.7	0.3	0.4	0.7	0.3
Service occupations						
Chef/cook	0.9	1.5	0.3	1.0	1.7	0.4
Cosmetologist	1.8	1.6	3.3	2.0	1.8	3.5
Childcare worker	1.1	2.1	0.3	1.3	2.3	0.3
Teachers' aide	0.7	1.2	—	0.7	1.3	—
Paralegal/legal assistant	0.4	2.3	0.8	1.5	2.5	0.9

— Too few cases for reliable estimate.

NOTE: Estimates are based on 2-year and less-than-2-year institutions with Title IV eligibility.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Education Institutions, 1999.

Table 26.—Percent of less-than-4-year postsecondary institutions offering listed occupational programs that use each of 5 procedures to ensure they teach jobs skills, by type of institution and broad program area: 1999

Institutions that use procedure in:	All institutions	2-year	Less-than-2-year
All of the listed programs:[1]			
Industry advisory committee	70	61	80
Survey of employers' skill needs	66	54	81
Followup survey of graduates	71	60	84
Mechanisms for faculty to get recent work experience	39	31	50
Periodic internal review	76	70	84
At least one of the listed programs:[1]			
Industry advisory committee	87	89	84
Survey of employers' skill needs	83	82	84
Followup survey of graduates	88	88	89
Mechanisms for faculty to get recent work experience	54	53	56
Periodic internal review	88	89	87
All of the listed programs for:[2]			
Business and marketing occupations			
Industry advisory committee	81	80	85
Survey of employers' skill needs	67	62	83
Followup survey of graduates	76	75	83
Mechanisms for faculty to get recent work experience	35	35	36
Periodic internal review	83	82	87
Technical occupations			
Industry advisory committee	84	84	87
Survey of employers' skill needs	64	61	77
Followup survey of graduates	74	73	75
Mechanisms for faculty to get recent work experience	41	39	49
Periodic internal review	82	83	81
Mechanical occupations			
Industry advisory committee	89	89	89
Survey of employers' skill needs	63	61	72
Followup survey of graduates	74	73	78
Mechanisms for faculty to get recent work experience	45	45	45
Periodic internal review	81	82	77
Building trades			
Industry advisory committee	83	81	90
Survey of employers' skill needs	59	56	73
Followup survey of graduates	69	67	75
Mechanisms for faculty to get recent work experience	43	42	46
Periodic internal review	74	73	80
Health/life sciences occupations			
Industry advisory committee	78	72	92
Survey of employers' skill needs	66	62	78
Followup survey of graduates	70	67	79
Mechanisms for faculty to get recent work experience	41	38	50
Periodic internal review	79	76	87
Service occupations			
Industry advisory committee	80	80	80
Survey of employers' skill needs	70	62	83
Followup survey of graduates	78	70	90
Mechanisms for faculty to get recent work experience	45	37	56
Periodic internal review	83	81	86

Table 26.—Percent of less-than-4-year postsecondary institutions offering listed occupational programs that use each of 5 procedures to ensure they teach jobs skills, by type of institution and broad program area: 1999 (continued)

Institutions that use procedure in:	All institutions	2-year	Less-than-2-year
At least one of the listed programs for:[2]			
Business and marketing occupations			
Industry advisory committee	87	87	86
Survey of employers' skill needs	74	71	85
Followup survey of graduates	83	82	85
Mechanisms for faculty to get recent work experience	40	41	39
Periodic internal review	87	87	88
Technical occupations			
Industry advisory committee	91	92	89
Survey of employers' skill needs	73	72	79
Followup survey of graduates	81	82	77
Mechanisms for faculty to get recent work experience	48	47	52
Periodic internal review	87	88	83
Mechanical occupations			
Industry advisory committee	94	94	96
Survey of employers' skill needs	72	71	80
Followup survey of graduates	82	82	84
Mechanisms for faculty to get recent work experience	52	52	53
Periodic internal review	85	86	83
Building trades			
Industry advisory committee	91	91	92
Survey of employers' skill needs	68	66	79
Followup survey of graduates	78	78	81
Mechanisms for faculty to get recent work experience	50	51	48
Periodic internal review	81	81	81
Health/life sciences occupations			
Industry advisory committee	90	88	94
Survey of employers' skill needs	77	76	81
Followup survey of graduates	86	86	84
Mechanisms for faculty to get recent work experience	50	50	53
Periodic internal review	87	86	89
Service occupations			
Industry advisory committee	85	89	81
Survey of employers' skill needs	76	71	83
Followup survey of graduates	84	80	90
Mechanisms for faculty to get recent work experience	49	44	56
Periodic internal review	86	86	86

[1]The denominator in the percentage ratio represents the number of institutions with at least one listed occupational program. The numerator is the number of those institutions using the procedure (in all programs or in at least one program).
[2]The denominator in the percentage ratio represents the number of institutions with at least one listed occupational program in the broad program area. The numerator is the number of those institutions using the procedure (in all programs or in at least one program).
NOTE: Estimates are based on 2-year and less-than-2-year institutions with Title IV eligibility.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Education Institutions, 1999.

Table 26a.—Standard errors of the percent of less-than-4-year postsecondary institutions offering listed occupational programs that use each of 5 procedures to ensure they teach jobs skills, by type of institution and broad program area: 1999

Institutions that use procedure in:	All institutions	2-year	Less-than-2-year
All of the listed programs:			
Industry advisory committee	1.6	2.4	2.4
Survey of employers' skill needs	1.7	2.4	2.2
Followup survey of graduates	1.4	1.9	2.1
Mechanisms for faculty to get recent work experience	2.3	2.1	3.5
Periodic internal review	1.5	2.1	2.3
At least one of the listed programs:			
Industry advisory committee	1.3	1.8	2.4
Survey of employers' skill needs	1.4	2.1	2.1
Followup survey of graduates	1.3	1.5	2.2
Mechanisms for faculty to get recent work experience	2.2	2.1	3.5
Periodic internal review	1.3	1.6	2.3
All of the listed programs for:			
Business and marketing occupations			
Industry advisory committee	1.9	2.2	3.3
Survey of employers' skill needs	1.8	2.2	2.3
Followup survey of graduates	1.7	2.1	2.8
Mechanisms for faculty to get recent work experience	2.1	2.3	3.7
Periodic internal review	1.9	2.2	2.4
Technical occupations			
Industry advisory committee	1.6	1.8	3.2
Survey of employers' skill needs	2.1	2.5	3.5
Followup survey of graduates	1.6	2.0	3.5
Mechanisms for faculty to get recent work experience	2.0	2.3	4.8
Periodic internal review	1.8	2.1	3.3
Mechanical occupations			
Industry advisory committee	1.6	1.8	2.7
Survey of employers' skill needs	2.7	3.1	2.8
Followup survey of graduates	2.0	2.4	3.8
Mechanisms for faculty to get recent work experience	2.6	3.0	4.5
Periodic internal review	2.2	2.6	3.5
Building trades			
Industry advisory committee	2.6	2.9	2.3
Survey of employers' skill needs	2.8	3.1	3.6
Followup survey of graduates	2.7	3.0	3.2
Mechanisms for faculty to get recent work experience	2.9	3.3	4.9
Periodic internal review	3.3	3.9	2.9
Health/life sciences occupations			
Industry advisory committee	1.8	2.2	1.8
Survey of employers' skill needs	2.3	2.9	2.6
Followup survey of graduates	1.7	2.5	2.9
Mechanisms for faculty to get recent work experience	2.1	2.6	3.4
Periodic internal review	1.8	2.5	2.3
Service occupations			
Industry advisory committee	2.1	1.9	4.0
Survey of employers' skill needs	2.1	2.7	3.0
Followup survey of graduates	2.0	2.3	3.3
Mechanisms for faculty to get recent work experience	2.9	2.7	5.5
Periodic internal review	2.1	2.5	3.5

Table 26a.—Standard errors of the percent of less-than-4-year postsecondary institutions offering listed occupational programs that use each of 5 procedures to ensure they teach jobs skills, by type of institution and broad program area: 1999 (continued)

Institutions that use procedure in:	All institutions	2-year	Less-than-2-year
At least one of the listed programs for:			
Business and marketing occupations			
Industry advisory committee	1.6	1.8	3.3
Survey of employers' skill needs	1.7	2.0	2.3
Followup survey of graduates	1.5	1.9	2.7
Mechanisms for faculty to get recent work experience	2.2	2.4	3.9
Periodic internal review	1.6	1.9	2.4
Technical occupations			
Industry advisory committee	1.3	1.4	3.2
Survey of employers' skill needs	2.0	2.3	3.5
Followup survey of graduates	1.4	1.8	3.6
Mechanisms for faculty to get recent work experience	2.1	2.3	4.8
Periodic internal review	1.6	1.9	3.2
Mechanical occupations			
Industry advisory committee	1.2	1.4	1.9
Survey of employers' skill needs	2.3	2.7	2.9
Followup survey of graduates	1.6	1.8	2.9
Mechanisms for faculty to get recent work experience	2.6	2.9	4.9
Periodic internal review	2.1	2.4	3.9
Building trades			
Industry advisory committee	1.5	1.6	2.4
Survey of employers' skill needs	2.3	2.6	3.2
Followup survey of graduates	1.8	2.0	2.6
Mechanisms for faculty to get recent work experience	2.7	3.1	4.6
Periodic internal review	2.7	3.2	2.8
Health/life sciences occupations			
Industry advisory committee	1.4	1.7	1.4
Survey of employers' skill needs	1.8	2.3	2.5
Followup survey of graduates	1.3	1.6	2.5
Mechanisms for faculty to get recent work experience	2.0	2.5	3.4
Periodic internal review	1.5	2.1	2.1
Service occupations			
Industry advisory committee	2.1	1.8	4.0
Survey of employers' skill needs	1.8	2.2	3.0
Followup survey of graduates	1.8	1.8	3.3
Mechanisms for faculty to get recent work experience	3.0	2.8	5.5
Periodic internal review	2.0	2.4	3.5

NOTE: Estimates are based on 2-year and less-than-2-year institutions with Title IV eligibility.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Education Institutions, 1999.

Table 27.—Percent of less-than-4-year postsecondary institutions offering listed occupational programs that use a skill competency list, by type of institution and broad program area: 1999

Institutions using a skill competency list in:	All institutions	2-year	Less-than-2-year
All of the listed programs	77	66	91
At least one of the listed programs	93	92	96
All of the listed programs for:[1]			
Business and marketing occupations	75	70	92
Technical occupations	77	75	87
Mechanical occupations	81	78	97
Building trades	84	82	96
Health/life sciences occupations	85	82	94
Service occupations	81	72	94
At least one of the listed programs for:[1]			
Business and marketing occupations	82	79	94
Technical occupations	86	84	91
Mechanical occupations	88	86	99
Building trades	90	88	99
Health/life sciences occupations	92	90	97
Service occupations	87	82	94

[1]The denominator in the percentage ratio represents the number of institutions with at least one listed occupational program in the broad program area. The numerator is the number of those institutions using a skill competency list (in all programs or in at least one program).

NOTE: Estimates are based on 2-year and less-than-2-year institutions with Title IV eligibility.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Institutions, 1999.

Table 27a.—Standard errors of the percent of less-than-4-year postsecondary institutions offering listed occupational programs that use a skill competency list, by type of institution and broad program area: 1999

Institutions using a skill competency list in:	All institutions	2-year	Less-than-2-year
All of the listed programs.	1.3	2.1	1.7
At least one of the listed programs.	0.9	1.5	1.4
All of the listed programs for:			
Business and marketing occupations	2.2	2.7	2.6
Technical occupations	1.8	2.2	3.4
Mechanical occupations	2.3	2.7	0.3
Building trades	2.1	2.5	1.4
Health/life sciences occupations	1.4	1.9	1.5
Service occupations	1.7	2.5	2.4
At least one of the listed programs for:			
Business and marketing occupations	2.0	2.4	2.1
Technical occupations	1.7	2.0	2.9
Mechanical occupations	2.1	2.5	0.1
Building trades	1.6	2.0	0.8
Health/life sciences occupations	1.3	1.7	1.1
Service occupations	1.7	2.5	2.4

NOTE: Estimates are based on 2-year and less-than-2-year institutions with Title IV eligibility.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Institutions, 1999.

Table 28.—Percent of less-than-4-year postsecondary institutions offering listed occupational programs that have different levels of involvement by educators and industry in developing or adopting skill competency lists, by type of institution and broad program area: 1999

Institutions with each level of educator/industry involvement in:	All institutions	2-year	Less-than-2- year
All of the listed programs:[1]			
Done exclusively by individual course instructors or group(s) of educators	6	1	13
Done primarily by educators with industry input	12	6	20
Done with about equal educator and industry input	14	7	23
Done primarily/exclusively by industry	1	—	2
At least one of the listed programs:[1]			
Done exclusively by individual course instructors or group(s) of educators	14	12	15
Done primarily by educators with industry input	44	52	33
Done with about equal educator and industry input	36	38	34
Done primarily/exclusively by industry	8	11	5
All of the listed programs for:[2]			
Business and marketing occupations			
Done exclusively by individual course instructors or group(s) of educators	6	6	7
Done primarily by educators with industry input	43	41	48
Done with about equal educator and industry input	20	17	33
Done primarily/exclusively by industry	1	—	—
Technical occupations			
Done exclusively by individual course instructors or group(s) of educators	4	4	3
Done primarily by educators with industry input	38	37	40
Done with about equal educator and industry input	24	22	32
Done primarily/exclusively by industry	1	1	3
Mechanical occupations			
Done exclusively by individual course instructors or group(s) of educators	3	3	6
Done primarily by educators with industry input	39	39	37
Done with about equal educator and industry input	26	22	44
Done primarily/exclusively by industry	3	3	—
Building trades			
Done exclusively by individual course instructors or group(s) of educators	4	5	—
Done primarily by educators with industry input	38	38	43
Done with about equal educator and industry input	27	24	42
Done primarily/exclusively by industry	7	8	—
Health/life sciences occupations			
Done exclusively by individual course instructors or group(s) of educators	6	5	9
Done primarily by educators with industry input	39	39	40
Done with about equal educator and industry input	26	22	36
Done primarily/exclusively by industry	5	5	5
Service occupations			
Done exclusively by individual course instructors or group(s) of educators	11	5	20
Done primarily by educators with industry input	34	37	29
Done with about equal educator and industry input	28	21	37
Done primarily/exclusively by industry	2	—	4

Table 28.—Percent of less-than-4-year postsecondary institutions offering listed occupational programs that have different levels of involvement by educators and industry in developing or adopting skill competency lists, by type of institution and broad program area: 1999 (continued)

Institutions with each level of educator/industry involvement in:	All institutions	2-year	Less-than-2-year
At least one of the listed programs for:[2]			
Business and marketing occupations			
Done exclusively by individual course instructors or group(s) of educators	9	10	8
Done primarily by educators with industry input	50	50	52
Done with about equal educator and industry input	26	24	34
Done primarily/exclusively by industry	1	1	—
Technical occupations			
Done exclusively by individual course instructors or group(s) of educators	7	8	6
Done primarily by educators with industry input	51	51	49
Done with about equal educator and industry input	33	32	38
Done primarily/exclusively by industry	4	3	6
Mechanical occupations			
Done exclusively by individual course instructors or group(s) of educators	5	4	7
Done primarily by educators with industry input	49	50	44
Done with about equal educator and industry input	36	33	50
Done primarily/exclusively by industry	8	8	7
Building trades			
Done exclusively by individual course instructors or group(s) of educators	6	6	5
Done primarily by educators with industry input	47	46	48
Done with about equal educator and industry input	32	29	45
Done primarily/exclusively by industry	12	13	6
Health/life sciences occupations			
Done exclusively by individual course instructors or group(s) of educators	7	6	10
Done primarily by educators with industry input	48	50	43
Done with about equal educator and industry input	36	35	41
Done primarily/exclusively by industry	10	12	6
Service occupations			
Done exclusively by individual course instructors or group(s) of educators	13	8	20
Done primarily by educators with industry input	42	50	30
Done with about equal educator and industry input	34	30	38
Done primarily/exclusively by industry	4	4	5

— Too few cases for reliable estimate.

[1]The denominator in the percentage ratio represents the number of institutions with at least one listed occupational program. The numerator is the number of those institutions that have different levels of involvement by educators and industry in developing or adopting skill competency lists (in all programs or in at least one program).

[2]The denominator in the percentage ratio represents the number of institutions with at least one listed occupational program in the broad program area. The numerator is the number of those institutions that have different levels of involvement by educators and industry in developing or adopting skill competency lists (in all programs or in at least one program).

NOTE: Estimates are based on 2-year and less-than-2-year institutions with Title IV eligibility.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Institutions, 1999.

Table 28a.—Standard errors of the percent of less-than-4-year postsecondary institutions offering listed occupational programs that have different levels of involvement by educators and industry in developing or adopting skill competency lists, by type of institution and broad program area: 1999

Institutions with each level of educator/industry involvement in:	All institutions	2-year	Less-than-2-year
All of the listed programs:			
Done exclusively by individual course instructors or group(s) of educators	1.4	0.5	2.8
Done primarily by educators with industry input	1.4	1.4	2.5
Done with about equal educator and industry input	1.5	1.7	2.8
Done primarily/exclusively by industry	0.4	—	0.8
At least one of the listed programs:			
Done exclusively by individual course instructors or group(s) of educators	1.6	1.8	2.8
Done primarily by educators with industry input	1.9	2.5	2.6
Done with about equal educator and industry input	1.8	2.3	2.8
Done primarily/exclusively by industry	0.8	1.3	1.0
All of the listed programs for:			
Business and marketing occupations			
Done exclusively by individual course instructors or group(s) of educators	1.3	1.5	2.2
Done primarily by educators with industry input	2.3	2.7	3.7
Done with about equal educator and industry input	1.6	1.7	3.3
Done primarily/exclusively by industry	0.3	—	—
Technical occupations			
Done exclusively by individual course instructors or group(s) of educators	1.0	1.1	1.1
Done primarily by educators with industry input	1.9	2.2	4.4
Done with about equal educator and industry input	1.8	2.0	3.4
Done primarily/exclusively by industry	0.5	0.5	1.5
Mechanical occupations			
Done exclusively by individual course instructors or group(s) of educators	1.0	1.0	3.2
Done primarily by educators with industry input	2.9	3.3	5.2
Done with about equal educator and industry input	2.4	2.2	4.8
Done primarily/exclusively by industry	0.9	1.0	—
Building trades			
Done exclusively by individual course instructors or group(s) of educators	1.3	1.6	—
Done primarily by educators with industry input	3.1	3.6	4.2
Done with about equal educator and industry input	2.4	2.8	4.0
Done primarily/exclusively by industry	1.2	1.4	—
Health/life sciences occupations			
Done exclusively by individual course instructors or group(s) of educators	1.1	1.1	2.3
Done primarily by educators with industry input	2.2	2.8	3.0
Done with about equal educator and industry input	2.2	2.4	3.5
Done primarily/exclusively by industry	1.0	1.2	1.4
Service occupations			
Done exclusively by individual course instructors or group(s) of educators	1.8	1.5	4.6
Done primarily by educators with industry input	2.4	3.0	4.1
Done with about equal educator and industry input	2.4	2.4	4.4
Done primarily/exclusively by industry	0.6	—	1.4

Table 28a.—Standard errors of the percent of less-than-4-year postsecondary institutions offering listed occupational programs that have different levels of involvement by educators and industry in developing or adopting skill competency lists, by type of institution and broad program area: 1999 (continued)

Institutions with each level of educator/industry involvement in:	All institutions	2-year	Less-than-2-year
At least one of the listed programs for:			
Business and marketing occupations			
Done exclusively by individual course instructors or group(s) of educators	1.6	1.8	2.3
Done primarily by educators with industry input	2.3	2.8	3.9
Done with about equal educator and industry input	1.8	1.9	3.3
Done primarily/exclusively by industry	0.4	0.5	—
Technical occupations			
Done exclusively by individual course instructors or group(s) of educators	1.4	1.5	2.1
Done primarily by educators with industry input	1.9	2.1	4.1
Done with about equal educator and industry input	1.7	2.1	3.4
Done primarily/exclusively by industry	0.7	0.6	2.2
Mechanical occupations			
Done exclusively by individual course instructors or group(s) of educators	1.1	1.2	3.4
Done primarily by educators with industry input	2.9	3.2	4.5
Done with about equal educator and industry input	2.5	2.7	4.8
Done primarily/exclusively by industry	1.3	1.5	1.8
Building trades			
Done exclusively by individual course instructors or group(s) of educators	1.6	1.9	1.5
Done primarily by educators with industry input	3.1	3.6	4.0
Done with about equal educator and industry input	2.4	2.8	4.1
Done primarily/exclusively by industry	1.7	2.0	1.5
Health/life sciences occupations			
Done exclusively by individual course instructors or group(s) of educators	1.2	1.3	2.3
Done primarily by educators with industry input	2.1	2.8	2.9
Done with about equal educator and industry input	2.1	2.5	3.5
Done primarily/exclusively by industry	1.3	1.5	1.5
Service occupations			
Done exclusively by individual course instructors or group(s) of educators	2.0	1.7	4.6
Done primarily by educators with industry input	2.4	2.9	4.1
Done with about equal educator and industry input	2.5	2.6	4.4
Done primarily/exclusively by industry	0.8	1.0	1.5

— Too few cases for reliable estimate.

NOTE: Estimates are based on 2-year and less-than-2-year institutions with Title IV eligibility.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Institutions, 1999.

Table 29.—Percent of less-than-4-year postsecondary institutions offering listed occupational programs that offer each of 5 credentials, by type of institution and broad program area: 1999

Institutions that offer each credential in:	All institutions	2-year	Less-than-2-year
All of the listed programs:[1]			
Associate's degree	17	28	4
Institutional certificate/diploma	53	28	84
State registration, license or certificate	29	7	56
Industry/trade certificate or diploma	8	3	13
Company certificate	1	—	2
At least one of the listed programs:[1]			
Associate's degree	51	86	8
Institutional certificate/diploma	87	86	89
State registration, license or certificate	48	65	72
Industry/trade certificate or diploma	32	38	25
Company certificate	17	23	9
All of the listed programs for:[2]			
Business and marketing occupations			
Associate's degree	59	71	10
Institutional certificate/diploma	58	50	92
State registration, license or certificate	4	3	9
Industry/trade certificate or diploma	3	2	5
Company certificate	1	—	5
Technical occupations			
Associate's degree	53	61	18
Institutional certificate/diploma	50	43	85
State registration, license or certificate	4	3	8
Industry/trade certificate or diploma	6	4	14
Company certificate	7	5	16
Mechanical occupations			
Associate's degree	36	41	8
Institutional certificate/diploma	69	66	89
State registration, license or certificate	5	4	11
Industry/trade certificate or diploma	10	8	18
Company certificate	1	1	2
Building trades			
Associate's degree	5	6	—
Institutional certificate/diploma	19	20	16
State registration, license or certificate	4	4	5
Industry/trade certificate or diploma	5	4	7
Company certificate	—	—	—
Health/life science occupations			
Associate's degree	24	30	6
Institutional certificate/diploma	53	41	89
State registration, license or certificate	41	40	46
Industry/trade certificate or diploma	9	6	17
Company certificate	1	1	—
Service occupations			
Associate's degree	31	51	2
Institutional certificate/diploma	65	52	84
State registration, license or certificate	43	16	80
Industry/trade certificate or diploma	8	4	15
Company certificate	1	—	2

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Table 29.—Percent of less-than-4-year postsecondary institutions offering listed occupational programs that offer each of 5 credentials, by type of institution and broad program area: 1999 (continued)

Institutions that offer each credential in:	All institutions	2-year	Less-than-2-year
At least one of the listed programs for:[2]			
Business and marketing occupations			
Associate's degree	72	86	13
Institutional certificate/diploma	75	70	95
State registration, license or certificate	8	8	10
Industry/trade certificate or diploma	8	8	7
Company certificate	4	3	6
Technical occupations			
Associate's degree	72	83	24
Institutional certificate/diploma	74	71	89
State registration, license or certificate	7	7	11
Industry/trade certificate or diploma	17	17	21
Company certificate	27	27	29
Mechanical occupations			
Associate's degree	60	69	11
Institutional certificate/diploma	85	83	97
State registration, license or certificate	25	25	26
Industry/trade certificate or diploma	36	34	45
Company certificate	4	4	6
Building trades			
Associate's degree	37	42	13
Institutional certificate/diploma	86	85	93
State registration, license or certificate	23	22	27
Industry/trade certificate or diploma	32	21	35
Company certificate	1	1	—
Health/life science occupations			
Associate's degree	54	70	9
Institutional certificate/diploma	83	79	92
State registration, license or certificate	71	74	64
Industry/trade certificate or diploma	18	14	28
Company certificate	1	1	2
Service occupations			
Associate's degree	45	76	3
Institutional certificate/diploma	78	74	85
State registration, license or certificate	59	40	85
Industry/trade certificate or diploma	14	13	16
Company certificate	1	—	2

— Too few cases for reliable estimate.

[1]The denominator in the percentage ratio represents the number of institutions with at least one listed occupational program. The numerator is the number of those institutions offering the credential (in all programs or in at least one program).

[2]The denominator in the percentage ratio represents the number of institutions with at least one listed occupational program in the broad program area. The numerator is the number of those institutions offering the credential (in all programs or in at least one program).

NOTE: Estimates are based on 2-year and less-than-2-year institutions with Title IV eligibility.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System, Survey on Occupational Programs in Postsecondary Institutions, 1999.

Table 29a.—Standard errors of the percent of less-than-4-year postsecondary institutions offering listed occupational programs that offer each of 5 credentials, by type of institution and broad program area: 1999

Institutions that offer each credential in:	All institutions	2-year	Less-than-2-year
All of the listed programs:			
Associate's degree	1.2	2.0	0.8
Institutional certificate/diploma	1.7	2.4	2.2
State registration, license or certificate	1.4	1.4	2.4
Industry/trade certificate or diploma	1.0	1.0	2.3
Company certificate	0.4	—	0.8
At least one of the listed programs:			
Associate's degree	1.3	2.0	1.0
Institutional certificate/diploma	1.2	1.8	2.2
State registration, license or certificate	1.7	2.4	2.4
Industry/trade certificate or diploma	1.6	1.9	2.3
Company certificate	1.1	1.8	1.1
All of the listed programs for:			
Business and marketing occupations			
Associate's degree	1.9	2.2	2.3
Institutional certificate/diploma	2.0	2.5	2.3
State registration, license or certificate	0.8	0.9	2.2
Industry/trade certificate or diploma	0.8	0.8	1.9
Company certificate	0.4	—	1.4
Technical occupations			
Associate's degree	2.4	2.9	3.6
Institutional certificate/diploma	2.2	2.6	2.8
State registration, license or certificate	0.9	1.0	2.4
Industry/trade certificate or diploma	1.2	1.3	3.0
Company certificate	1.2	1.4	2.9
Mechanical occupations			
Associate's degree	3.0	3.6	2.0
Institutional certificate/diploma	2.4	2.9	2.5
State registration, license or certificate	1.1	1.2	3.1
Industry/trade certificate or diploma	1.6	1.6	4.0
Company certificate	0.3	0.4	0.2
Building trades			
Associate's degree	1.5	1.7	—
Institutional certificate/diploma	2.5	2.9	3.2
State registration, license or certificate	1.4	1.7	1.7
Industry/trade certificate or diploma	1.3	1.6	1.5
Company certificate	—	—	—
Health/life science occupations			
Associate's degree	1.8	2.4	1.6
Institutional certificate/diploma	1.9	2.4	1.5
State registration, license or certificate	2.1	2.8	3.1
Industry/trade certificate or diploma	1.2	1.5	2.8
Company certificate	0.4	0.5	—
Service occupations			
Associate's degree	2.1	3.1	0.6
Institutional certificate/diploma	2.3	2.8	3.5
State registration, license or certificate	2.1	2.3	2.9
Industry/trade certificate or diploma	1.6	1.1	3.2
Company certificate	0.5	—	1.1

Table 29a.—Standard errors of the percent of less-than-4-year postsecondary institutions offering listed occupational programs that offer each of 5 credentials, by type of institution and broad program area: 1999 (continued)

Institutions that offer each credential in:	All institutions	2-year	Less-than-2-year
At least one of the listed programs for:			
Business and marketing occupations			
Associate's degree	1.8	2.1	2.6
Institutional certificate/diploma	2.0	2.4	1.7
State registration, license or certificate	1.0	1.2	2.2
Industry/trade certificate or diploma	1.2	1.4	1.9
Company certificate	0.8	1.0	1.4
Technical occupations			
Associate's degree	1.9	2.3	3.6
Institutional certificate/diploma	2.2	2.7	2.6
State registration, license or certificate	1.3	1.4	2.7
Industry/trade certificate or diploma	1.8	2.0	3.5
Company certificate	2.1	2.4	4.0
Mechanical occupations			
Associate's degree	2.5	3.1	2.7
Institutional certificate/diploma	1.9	2.2	1.9
State registration, license or certificate	2.6	3.0	4.3
Industry/trade certificate or diploma	2.6	3.0	4.4
Company certificate	1.0	1.1	1.9
Building trades			
Associate's degree	2.2	2.7	2.9
Institutional certificate/diploma	1.8	2.1	2.4
State registration, license or certificate	2.6	3.0	3.9
Industry/trade certificate or diploma	2.8	3.3	3.3
Company certificate	0.4	—	—
Health/life science occupations			
Associate's degree	1.9	2.5	1.7
Institutional certificate/diploma	1.6	2.1	1.3
State registration, license or certificate	1.8	2.3	3.6
Industry/trade certificate or diploma	1.6	2.1	3.1
Company certificate	0.5	0.5	1.0
Service occupations			
Associate's degree	2.1	2.8	0.7
Institutional certificate/diploma	2.1	2.3	3.5
State registration, license or certificate	2.2	2.9	2.8
Industry/trade certificate or diploma	1.8	1.7	3.2
Company certificate	0.5	—	1.1

—Too few cases for reliable estimate.

NOTE: Estimates are based on 2-year and less-than-2-year institutions with Title IV eligibility.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information Survey on Occupational Programs in Postsecondary Institutions, 1999.

Appendix A

Methodology and Technical Notes

METHODOLOGY AND TECHNICAL NOTES

Surveys and Samples

The tabular statistics in this report present data collected from the 1999 "Survey on Vocational Programs in Secondary Schools" and the 1999 "Survey on Occupational Programs in Postsecondary Education Institutions." The surveys were conducted through the National Center for Education Statistics (NCES) Fast Response Survey System (FRSS) and Postsecondary Education Quick Information System (PEQIS), respectively.

The lists of occupational program areas used in the surveys were developed through an iterative process. First, NCES, in consultation with the Office for Vocational and Adult Education (OVAE, the U.S. Department of Education office that sponsored the surveys), identified vocational occupations from the list of occupations in the Bureau of Labor Statistics' (BLS's) 1998 *Occupational Outlook Quarterly* (Bureau of Labor Statistics, 1998); vocational occupations were defined as occupations that do not typically require a bachelor's or higher degree, and/or for which secondary schools typically provide vocational education. Second, at OVAE's request, NCES selected from the overall list of vocational occupations a short list of relatively large and fast-growing occupations. These were defined as occupations that the *Occupational Outlook Quarterly* listed as (1) relatively large (at least 100,000 jobs in 1996) and (2) fast-growing (projected to increase in size by 10 percent or 500,000 jobs from 1996 to 2006) or with a shortage of skilled workers in 1996. Subsequent instrument review and pilot testing, however, revealed that both researchers and practitioners preferred to have information on a broader range of occupational areas for which vocational education trains students. Thus, vocational program areas recommended by these individuals were added to the survey instruments, using the occupations listed in the *Occupational Outlook Quarterly* that most closely corresponded to the recommended program areas. There is one exception to this rule. The occupation of "agriscience technician" was included on the surveys to indicate the preparation provided by agriculture programs, even though this occupation was not listed in the 1998 *Occupational Outlook Quarterly*.

To select a nationally representative sample of public secondary schools for the FRSS survey, a stratified sample of 1,200 public secondary schools, including 600 vocational schools and 600 comprehensive (regular) schools, was selected from the 1996-97 Quality Education Data (QED) National Education Database. The QED database is compiled from a variety of sources,

including the NCES Common Core of Data (CCD) public school universe file. Almost 16,000 comprehensive secondary schools and 1,300 vocational schools met the eligibility requirement for this study; that is, they had 11th and 12th grades. Excluded from the sampling frame were private schools, nonregular schools such as special education and alternative schools, and schools in the outlying U.S. territories.

The coverage of comprehensive public schools in the QED database was equivalent to that of the CCD universe file. However, the QED database appeared to have better coverage of vocational schools than did the CCD file for 1996-97 For example, the counts of vocational schools in the QED file by state were generally higher than the corresponding counts in the CCD file. In particular, the CCD file did not contain any listings of vocational schools in three states (Oklahoma, California, and Kansas). In contrast, the QED file contained numerous vocational schools in these states. It is for this reason that the QED database was used to develop the sampling frame for the FRSS survey.

For the PEQIS survey, the sample of postsecondary institutions was restricted to 2-year and less-than-2-year institutions that were eligible to participate in federal financial aid programs under Title IV of the Higher Education Act of 1965 (as amended). A stratified random sample of 1,289 institutions was selected, including 689 2-year institutions and 600 less-than-2-year institutions. The sample of 2-year postsecondary institutions was drawn from the Postsecondary Education Quick Information System (PEQIS) panel, which contains a stratified random sample of 2,000 4-year and 2-year postsecondary institutions. The PEQIS panel was constructed from NCES' 1995-96 Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics file. The PEQIS frame included 5,353 4-year, 2-year, and less-than-2-year institutions of higher education located in the 50 states and the District of Columbia. Only 2-year institutions that were eligible for Title IV financial aid participation were included for selection from the PEQIS panel.

The sampling frame for the supplementary sample of less-than-2-year institutions was the 1996-97 IPEDS Institutional Characteristics file. The institutions eligible for the supplementary sample were all less-than-2-year institutions in the 50 states and the District of Columbia (the same geographic area used for the PEQIS panel) that reported eligibility for Title IV participation. A total of 1,898 institutions met these requirements.

Respondents and Response Rates

For the FRSS survey, questionnaires with letters explaining the purpose of the study were mailed to school principals in early April 1999. The questionnaires were to be completed by the person who was most knowledgeable about vocational education at the school. Telephone followup of nonrespondents was conducted during May and June 1999. Of the 1,200 schools selected for the survey, 50 were found to be out of scope for the study (29 of these were postsecondary institutions). A total of 1,078 eligible schools completed the survey for an overall unweighted response rate of 94 percent. The weighted response rate was 95 percent.

The postsecondary questionnaires were mailed in mid-April 1999 to PEQIS coordinators at 2-year institutions and chief executive officers at less-than-2-year institutions. As with the FRSS survey, the questionnaire was to be completed by the person most knowledgeable about occupational programs at the institution. Telephone followup of nonrespondents started in late May, and data collection ended in early July 1999. Of the 1,289 postsecondary institutions sampled for the study, 103 were out of scope for the study; 57 of these institutions were closed, and 38 did not have Title IV eligibility. The survey was completed by 1,100 2-year and less-than-2-postsecondary institutions, yielding an overall unweighted response rate of 94 percent. The weighted response rate was also 94 percent.

Sampling and Nonsampling Errors

Survey responses were weighted to produce national estimates. The weights were designed to adjust for the variable probabilities of selection and differential nonresponse. The findings in this report are based on the sample selected and, consequently, are subject to sampling variability.

The survey estimates are also subject to nonsampling errors that can arise because of nonobservation (nonresponse and noncoverage) errors, errors of reporting, and errors made in data collection. These errors can sometimes bias the data. Nonsampling errors may include such problems as misrecording of responses; incorrect editing, coding, and data entry; differences related to the particular time the survey was conducted; or errors in data preparation. While general sampling theory can be used to determine how to estimate the sampling variability of a statistic, nonsampling errors are not easy to measure and, for measurement and adjustment purposes, usually require that an experiment be conducted as part of the data collection procedures or that data external to the study be used.

A number of actions were taken to minimize nonsampling error. The questionnaire was pretested with respondents like those who completed the survey. During the design of the survey and survey pretest, an effort was made to check for consistency of interpretation of questions and to eliminate ambiguous items. The questionnaire and instructions were extensively reviewed by NCES and the Office of Vocational and Adult Education, U.S. Department of Education. Manual and machine editing of the questionnaire responses were conducted to check the data for accuracy and consistency. Cases with missing or inconsistent items were recontacted by telephone. Data were keyed with 100 percent verification.

Standard Errors and Statistical Tests

The standard error is a measure of the variability of estimates due to sampling. It indicates the variability of a sample estimate that would be obtained from all possible samples of a given design and size. Standard errors are used as a measure of the precision expected from a particular sample. If all possible samples were surveyed under similar conditions, intervals of 1.96 standard errors below to 1.96 standard errors above a particular statistic would include the true population parameter being estimated in about 95 percent of the samples. This is a 95 percent confidence interval. Estimates of standard errors for this report were computed using the jacknife replication method and are based on 95 percent confidence intervals. All statistical tests, except those in the "Relationships Among Program Characteristics" section, were based on t-tests conducted at the 95-percent confidence level.

Bonferroni adjustments were made to control for multiple comparisons where appropriate. For example, for an "experiment-wise" comparison involving g pairwise comparisons, each difference was tested at the 0.05/g significance level to control for the fact that g differences were simultaneously tested. The Bonferroni adjustment results in a more conservative critical value being used when judging statistical significance. This means that comparisons that would have been significant with a critical value of 1.96 may not be significant with the more conservative critical value. For example, the critical value for comparisons between any two of the six broad program areas is 2.64, rather than 1.96. This means that there must be a larger difference between the estimates being compared for there to be a statistically significant difference.

In the "Relationships Among Program Characteristics" section, the relationships between programs' quality-control structures were tested for statistical significance using the Wilcoxon signed-ranks test on the t-values obtained for each of the 28 program areas (see

Darlington, 1975 for a description of the Wilcoxon test). The Wilcoxon test is a relatively powerful nonparametric test; nonetheless, it is less powerful than a parametric test and therefore less likely than a parametric test to detect significant relationships between variables. Thus the findings in this report based on the Wilcoxon test should be viewed as exploratory.

Terms and Variables

For the secondary school survey, a **vocational program** was defined as a sequence of courses designed to prepare students for an occupation (e.g., nurses' aide) or occupation area (e.g., health care) that typically requires education below the baccalaureate level. Because the focus of the surveys is on preparation for jobs within specific occupations, the definition of vocational programs did *not* include career exploration or other introductory courses that prepare students for adult life or for work in general (e.g., consumer and homemaking, industrial arts). At the postsecondary level, an **occupational program** was defined as a sequence of courses designed to prepare students for an occupation (e.g., nurses' aide) that typically requires education below the baccalaureate level. To allow institutions to report noncredit courses, a noncredit occupational program could have included only one course or more than one course. In theory, a skill competency is defined as a concept, skill, or attitude that is essential to an occupation; a skill standard is the level of attainment or performance established for a skill competency. However, survey pretesting revealed that respondents typically use the term "skill competency" to refer to both competencies and standards. Because these terms tend to be used interchangeably in practice, **skill competency** was defined in the survey to include both the concept, skill, or attitude that is essential to an occupation, and to the level of attainment or performance established for a skill competency.

The term **comprehensive school** has exactly the same meaning as **regular school**. Comprehensive, or regular, schools do not focus primarily on special, vocational, or alternative education, although they may offer these programs in addition to the regular curriculum. A **vocational school** focuses primarily on vocational, technical or career education and provides education or training in at least one semiskilled or technical occupation.

The main classification variable was school type (vocational, comprehensive) for the secondary school survey, and level of institution (2-year, less-than-2-year) for the postsecondary survey. For secondary schools, school type was determined based on self-reported responses on the FRSS survey. At the postsecondary level, school type was determined based on IPEDS classifications (which were also based on self-report on IPEDS).

For the tabular analyses, several variables were constructed to measure the number of programs offered, skill competencies used for the programs offered, and skill certificates or industry-related credentials available for programs offered. The variables were constructed for all programs offered and for programs offered within the six broad occupation areas examined in the study.

Background Information

Both surveys were conducted under contract with Westat. The secondary survey was conducted using the Fast Response Survey System (FRSS), and the postsecondary survey was conducted using the Postsecondary Education Quick Information System (PEQIS). Westat's Project Director was Elizabeth Farris; Basmat Parsad was the Survey Manager; Ed Heaton, the Systems Analyst; Catherine Marshall, the Text and Graphics Processor; and Carol Litman, the Editor. Bernard Greene was the NCES Project Officer. The data were requested by the Office of Vocational and Adult Education, U.S. Department of Education.

The following individuals reviewed this report:

Outside NCES

- David Miller, Education Statistics Services Institute
- Irma Berry, Office of Vocational and Adult Education
- Vickie Schray, Office of Vocational and Adult Education

Inside NCES

- Steve Broughman
- Shelley Burns
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For more information about the surveys, "Survey of Vocational Programs in Secondary Schools" and "Survey of Occupational Programs in Postsecondary Education Institutions," contact:

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Appendix B

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Appendix C

Survey Instruments

U.S. DEPARTMENT OF EDUCATION
NATIONAL CENTER FOR EDUCATION STATISTICS
WASHINGTON, D.C. 20208-5651

FORM APPROVED
O.M.B. NO.: 1850-0733
EXPIRATION DATE: 07/1999

SURVEY ON VOCATIONAL PROGRAMS IN SECONDARY SCHOOLS

FAST RESPONSE SURVEY SYSTEM

This survey is authorized by law (P.L. 103-382). While you are not required to respond, your cooperation is needed to make the results of this survey comprehensive, accurate, and timely.

DEFINITIONS USED IN THIS SURVEY

Vocational Program: For this survey, a vocational program is defined as a sequence of courses designed to prepare students for an occupation (e.g., nurses' aide) or occupation area (e.g., health care) that typically requires education below the baccalaureate level. It does not include career exploration or other introductory courses that prepare students for adult life or for work in general (e.g., consumer and homemaking, industrial arts).

Skill competency: A skill competency is a concept, skill, or attitude that is essential to an occupation; the level of attainment or performance established for a skill competency is a skill standard. In this survey, we use the term "skill competencies" to refer to both skill competencies and skill standards.

Note:
- This questionnaire asks about vocational programs and courses offered by your school only. Do not include vocational programs and courses taken by your students at other schools (for example, regional vocational high schools that serve your school).
- The focus of this survey is the vocational programs and courses taken by secondary students. If your school offers any programs and courses that are taken only by other types of students (e.g., only postsecondary students), do not include those programs and courses.

LABEL

IF ABOVE INFORMATION IS INCORRECT, PLEASE MAKE CORRECTIONS DIRECTLY ON LABEL.

Name of person completing form:_____ Telephone:_____

Title/position:_____ E-mail:_____

Best days and times to reach you (in case of questions):_____

THANK YOU. PLEASE KEEP A COPY OF THIS SURVEY FOR YOUR FILES.

PLEASE RETURN COMPLETED FORM TO:	IF YOU HAVE ANY QUESTIONS, CONTACT:
WESTAT Attention: Parsad, 716606 1650 Research Boulevard Rockville, Maryland 20850	Basmat Parsad at Westat 800-937-8281, ext. 8222 or 301-251-8222 Fax: 1-800-254-0984 E-mail: Parsadb1@westat.com

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information is 1850-0733. The time required to complete this information collection is estimated to average 30 minutes per response, including the time to review instructions, search existing data resources, gather the data needed, and complete and review the information collected. If you have any comments concerning the accuracy of the time estimate(s) or suggestions for improving this form, please write to: U.S. Department of Education, Washington, D.C. 20202-4651. If you have comments or concerns regarding the status of your individual submission of this form, write directly to: National Center for Education Statistics, 555 New Jersey Avenue, N.W., Washington, D.C. 20208.

FRSS Form No. 72, 3/1999

1. Does your school offer a **vocational program** that prepares students for any of the occupations listed in question 2?

   Yes ..... ☐ *(Continue with question 2.)*
   No ..... ☐ Thank you. Please complete the respondent section on the front of the questionnaire and return the questionnaire to Westat.

2. For each of the following occupations:

   - Indicate in **column A** whether your school offers a **vocational program** that prepares students for that occupation. **NOTE:** A vocational program may include a sequence of courses in a single occupation (e.g., carpentry) or a cluster of courses in an occupational area (e.g., construction, healthcare). If it is a cluster program, check each occupation covered by the cluster.
   - Indicate in **columns under B** what procedures are used to ensure that courses teach relevant job skills. (Procedures may not be the same for all occupation areas.)

Occupation area/occupation	A. Check if program offered (see NOTE above)	B. Procedures used to ensure that courses teach relevant job skills				
		Industry advisory committee	Survey of employers' skill needs	Followup survey of graduates	Student work experience (e.g., internship)	Faculty externship (work experience)
		(Check ALL that apply in each row.)				
Business & Marketing Occupations						
a. Accountant/bookkeeper	☐	☐	☐	☐	☐	☐
b. Administrative assistant/secretary	☐	☐	☐	☐	☐	☐
c. Restaurant/food service manager	☐	☐	☐	☐	☐	☐
d. Sales associate	☐	☐	☐	☐	☐	☐
Technical & Mechanical Occupations						
a. AC/heating/refrigeration repair technician	☐	☐	☐	☐	☐	☐
b. Auto body repairer	☐	☐	☐	☐	☐	☐
c. Automotive mechanic/technician	☐	☐	☐	☐	☐	☐
d. Computer programmer	☐	☐	☐	☐	☐	☐
e. Computer graphic designer	☐	☐	☐	☐	☐	☐
f. Computer/electronics technician	☐	☐	☐	☐	☐	☐
g. Engineering technician	☐	☐	☐	☐	☐	☐
h. Drafter or CADD operator	☐	☐	☐	☐	☐	☐
i. Machinist	☐	☐	☐	☐	☐	☐
Building Trades						
a. Bricklayer or mason	☐	☐	☐	☐	☐	☐
b. Carpenter	☐	☐	☐	☐	☐	☐
c. Electrician	☐	☐	☐	☐	☐	☐
d. Plumber	☐	☐	☐	☐	☐	☐
e. Welder	☐	☐	☐	☐	☐	☐
Health/Life Sciences Occupations						
a. Emergency medical technician	☐	☐	☐	☐	☐	☐
b. Medical or dental assistant	☐	☐	☐	☐	☐	☐
c. Nurse or nurses' aide	☐	☐	☐	☐	☐	☐
d. Medical/life science lab technician	☐	☐	☐	☐	☐	☐
e. Agriscience technician	☐	☐	☐	☐	☐	☐
f. Veterinary assistant	☐	☐	☐	☐	☐	☐
Service Occupations						
a. Chef/cook	☐	☐	☐	☐	☐	☐
b. Cosmetologist	☐	☐	☐	☐	☐	☐
c. Childcare worker or teachers' aide	☐	☐	☐	☐	☐	☐
d. Paralegal/legal assistant	☐	☐	☐	☐	☐	☐

3. For each of the occupations for which your school offers a **vocational program:**

- Indicate in **column A** whether a list of **skill competencies** has been developed or adopted for the program.
- If a skill competency list has been developed or adopted, indicate which one of the **columns under B** best describes how educators and industry (business, labor, and/or employers) were involved in developing or adopting the competencies. (Involvement may not be the same for all occupation areas.)

Occupation area/occupation	**A. Has a skill competency list been developed or adopted?**		**B. If yes, which best describes how educators and industry were involved in developing or adopting the competency list?**				
	Yes	No	Done exclusively by individual course instructors	Done exclusively by group(s) of educators	Done primarily by educators with industry input	Done with about equal educator and industry input	Done primarily/ exclusively by industry
			(Check only ONE in each row.)				
Business & Marketing Occupations							
a. Accountant/bookkeeper	☐	☐	☐	☐	☐	☐	☐
b. Administrative assistant/secretary	☐	☐	☐	☐	☐	☐	☐
c. Restaurant/food service manager	☐	☐	☐	☐	☐	☐	☐
d. Sales associate	☐	☐	☐	☐	☐	☐	☐
Technical & Mechanical Occupations							
a. AC/heating/refrigeration repair technician	☐	☐	☐	☐	☐	☐	☐
b. Auto body repairer	☐	☐	☐	☐	☐	☐	☐
c. Automotive mechanic/technician	☐	☐	☐	☐	☐	☐	☐
d. Computer programmer	☐	☐	☐	☐	☐	☐	☐
e. Computer graphic designer	☐	☐	☐	☐	☐	☐	☐
f. Computer/electronics technician	☐	☐	☐	☐	☐	☐	☐
g. Engineering technician	☐	☐	☐	☐	☐	☐	☐
h. Drafter or CADD operator	☐	☐	☐	☐	☐	☐	☐
i. Machinist	☐	☐	☐	☐	☐	☐	☐
Building Trades							
a. Bricklayer or mason	☐	☐	☐	☐	☐	☐	☐
b. Carpenter	☐	☐	☐	☐	☐	☐	☐
c. Electrician	☐	☐	☐	☐	☐	☐	☐
d. Plumber	☐	☐	☐	☐	☐	☐	☐
e. Welder	☐	☐	☐	☐	☐	☐	☐
Health/Life Sciences Occupations							
a. Emergency medical technician	☐	☐	☐	☐	☐	☐	☐
b. Medical or dental assistant	☐	☐	☐	☐	☐	☐	☐
c. Nurse or nurses' aide	☐	☐	☐	☐	☐	☐	☐
d. Medical/life science lab technician	☐	☐	☐	☐	☐	☐	☐
e. Agriscience technician	☐	☐	☐	☐	☐	☐	☐
f. Veterinary assistant	☐	☐	☐	☐	☐	☐	☐
Service Occupations							
a. Chef/cook	☐	☐	☐	☐	☐	☐	☐
b. Cosmetologist	☐	☐	☐	☐	☐	☐	☐
c. Childcare worker or teachers' aide	☐	☐	☐	☐	☐	☐	☐
d. Paralegal/legal assistant	☐	☐	☐	☐	☐	☐	☐

4. For each of the occupations for which your school offers a **vocational program:**

- Indicate in **columns under A** the criteria used to determine whether a student is a **vocational program completer** (criteria may not be the same for all programs).
- Indicate in **columns under B** whether the program is designed to prepare students to (1) take a state or industry regulatory exam (i.e., to attain a state or industry certificate, license, or registration), and/or (2) earn a vocational/occupational skill certificate.

Occupation area/occupation	**A. Criteria used to determine whether a student is a vocational program completer**					**B. Program prepares students to:**			
	No criteria used – program completers not identified	End of program exam (not course or graduation exam)	Pass specific vocational courses	Minimum grade point average in program	Pass specific academic courses, different from graduation requirements	Take state or industry regulatory exam (e.g., to attain state license)		Earn a vocational/ occupa-tional skill certificate	
	(Check ALL that apply in each row.)					Yes	No	Yes	No
Business & Marketing Occupations									
a. Accountant/bookkeeper	☐	☐	☐	☐	☐	☐	☐	☐	☐
b. Administrative assistant/secretary	☐	☐	☐	☐	☐	☐	☐	☐	☐
c. Restaurant/food service manager	☐	☐	☐	☐	☐	☐	☐	☐	☐
d. Sales associate	☐	☐	☐	☐	☐	☐	☐	☐	☐
Technical & Mechanical Occupations									
a. AC/heating/refrigeration repair tech.	☐	☐	☐	☐	☐	☐	☐	☐	☐
b. Auto body repairer	☐	☐	☐	☐	☐	☐	☐	☐	☐
c. Automotive mechanic/technician	☐	☐	☐	☐	☐	☐	☐	☐	☐
d. Computer programmer	☐	☐	☐	☐	☐	☐	☐	☐	☐
e. Computer graphic designer	☐	☐	☐	☐	☐	☐	☐	☐	☐
f. Computer/electronics technician	☐	☐	☐	☐	☐	☐	☐	☐	☐
g. Engineering technician	☐	☐	☐	☐	☐	☐	☐	☐	☐
h. Drafter or CADD operator	☐	☐	☐	☐	☐	☐	☐	☐	☐
i. Machinist	☐	☐	☐	☐	☐	☐	☐	☐	☐
Building Trades									
a. Bricklayer or mason	☐	☐	☐	☐	☐	☐	☐	☐	☐
b. Carpenter	☐	☐	☐	☐	☐	☐	☐	☐	☐
c. Electrician	☐	☐	☐	☐	☐	☐	☐	☐	☐
d. Plumber	☐	☐	☐	☐	☐	☐	☐	☐	☐
e. Welder	☐	☐	☐	☐	☐	☐	☐	☐	☐
Health/Life Sciences Occupations									
a. Emergency medical technician	☐	☐	☐	☐	☐	☐	☐	☐	☐
b. Medical or dental assistant	☐	☐	☐	☐	☐	☐	☐	☐	☐
c. Nurse or nurses' aide	☐	☐	☐	☐	☐	☐	☐	☐	☐
d. Medical/life science lab technician	☐	☐	☐	☐	☐	☐	☐	☐	☐
e. Agriscience/technician	☐	☐	☐	☐	☐	☐	☐	☐	☐
f. Veterinary assistant	☐	☐	☐	☐	☐	☐	☐	☐	☐
Service Occupations									
a. Chef/cook	☐	☐	☐	☐	☐	☐	☐	☐	☐
b. Cosmetologist	☐	☐	☐	☐	☐	☐	☐	☐	☐
c. Childcare worker or teachers' aide	☐	☐	☐	☐	☐	☐	☐	☐	☐
d. Paralegal/legal assistant	☐	☐	☐	☐	☐	☐	☐	☐	☐

5. Which of the following best describes your school's structure? *(Check one only.)*

- ☐ Area or regional vocational school (with exclusively or predominately vocational programs)
- ☐ Focused vocational high school (with academic and vocational programs focused on a specific occupation area)
- ☐ Vocational high school (with a broad range of both academic and vocational programs)
- ☐ Comprehensive high school served by an area/regional vocational school
- ☐ Comprehensive high school not served by an area/regional vocational school

U.S. DEPARTMENT OF EDUCATION
NATIONAL CENTER FOR EDUCATION STATISTICS
WASHINGTON, D.C. 20208-5651

FORM APPROVED
O.M.B. NO.: 1850-0733
EXPIRATION DATE: 07/1999

SURVEY ON OCCUPATIONAL PROGRAMS IN POSTSECONDARY EDUCATION INSTITUTIONS

POSTSECONDARY EDUCATION QUICK INFORMATION SYSTEM

This survey is authorized by (P.L. 103-382). While you are not required to respond, your cooperation is needed to make the results of this survey comprehensive, accurate, and timely.

DEFINITIONS USED IN THIS SURVEY

Occupational program: For this survey, an occupational program is defined as a sequence of courses designed to prepare students for an occupation (e.g., nurses' aide) that typically requires education below the baccalaureate level. A non-credit occupational program may consist of only one course or more than one course.

Skill competency: A skill competency is a concept, skill, or attitude that is essential to an occupation; the level of attainment or performance established for a skill competency is a skill standard. In this survey, we use the term "skill competencies" to refer to both skill competencies and skill standards.

Note: This questionnaire asks about occupational programs and courses taken by postsecondary students. If your school offers any programs and courses that are taken only by other types of students (e.g., only secondary students), do not include those programs and courses.

LABEL

IF ABOVE INSTITUTION INFORMATION IS INCORRECT, PLEASE UPDATE DIRECTLY ON LABEL.

Name of person completing form:_____ Telephone:_____

Title/position:_____ E-mail: _____

Best days and times to reach you (in case of questions):_____

THANK YOU. PLEASE KEEP A COPY OF THIS SURVEY FOR YOUR RECORDS.

PLEASE RETURN COMPLETED FORM TO:

WESTAT
Attention: Parsad, 716608
1650 Research Boulevard
Rockville, Maryland 20850

IF YOU HAVE ANY QUESTIONS, CONTACT:

Basmat Parsad at Westat
800-937-8281, ext. 8222 or 301-251-8222
Fax: 1-800-254-0984
E-mail: Parsadb1@westat.com

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information is 1850-0733. The time required to complete this information collection is estimated to average 30 minutes per response, including the time to review instructions, search existing data resources, gather the data needed, and complete and review the information collected. If you have any comments concerning the accuracy of the time estimate(s) or suggestions for improving this form, please write to: U.S. Department of Education, Washington, D.C. 20202-4651. If you have comments or concerns regarding the status of your individual submission of this form, write directly to: National Center for Education Statistics, 555 New Jersey Avenue, N.W., Washington, D.C. 20208.

PEQIS Form No. 11, 3/1999

1. Does your institution offer an **occupational program** that prepares students for any of the occupations listed in question 2?

Yes ..... ☐ *(Continue with question 2.)*
No ..... ☐ Thank you. Please complete the respondent section on the front of the questionnaire and return the questionnaire to Westat.

2. For each of the following occupations for which your institution offers a program in the school year 1998-1999:
   - Indicate in **column A** whether non-credit courses are offered in the occupational program.
   - Indicate in **column B** whether courses are offered for credit in the occupational program.
   - Indicate in **columns under C** what procedures are used to ensure that the courses teach relevant job skills. (Procedures may not be the same for all occupation areas.)

Occupation area/occupation	A. Check if non-credit courses are offered	B. Check if for-credit courses are offered	C. Procedures used to ensure that courses teach relevant job skills				
			Industry advisory committee	Survey of employers' skill needs	Followup survey of graduates	Mechanisms for faculty to get recent work experience	Periodic internal review
			(Check ALL that apply in each row.)				
Business & Marketing Occupations							
a. Accountant/bookkeeper	☐	☐	☐	☐	☐	☐	☐
b. Administrative assistant/secretary	☐	☐	☐	☐	☐	☐	☐
c. Restaurant/food service manager	☐	☐	☐	☐	☐	☐	☐
d. Sales associate/manager	☐	☐	☐	☐	☐	☐	☐
Technical & Mechanical Occupations							
a. AC/heating/refrigeration repair technician	☐	☐	☐	☐	☐	☐	☐
b. Auto body repairer	☐	☐	☐	☐	☐	☐	☐
c. Automotive mechanic/technician	☐	☐	☐	☐	☐	☐	☐
d. Computer programmer	☐	☐	☐	☐	☐	☐	☐
e. Computer graphic designer	☐	☐	☐	☐	☐	☐	☐
f. Computer technician	☐	☐	☐	☐	☐	☐	☐
g. Electronics technician	☐	☐	☐	☐	☐	☐	☐
h. Engineering technician	☐	☐	☐	☐	☐	☐	☐
i. Drafter or CADD operator	☐	☐	☐	☐	☐	☐	☐
j. Machinist	☐	☐	☐	☐	☐	☐	☐
Building Trades							
a. Bricklayer or mason	☐	☐	☐	☐	☐	☐	☐
b. Carpenter	☐	☐	☐	☐	☐	☐	☐
c. Electrician	☐	☐	☐	☐	☐	☐	☐
d. Plumber	☐	☐	☐	☐	☐	☐	☐
e. Welder	☐	☐	☐	☐	☐	☐	☐
Health/Life Sciences Occupations							
a. Emergency medical technician	☐	☐	☐	☐	☐	☐	☐
b. Medical or dental assistant	☐	☐	☐	☐	☐	☐	☐
c. Nurses' aide or home health aide	☐	☐	☐	☐	☐	☐	☐
d. Licensed practical (vocational) nurse	☐	☐	☐	☐	☐	☐	☐
e. Registered nurse	☐	☐	☐	☐	☐	☐	☐
f. Medical/life science lab technician	☐	☐	☐	☐	☐	☐	☐
g. Agriscience technician	☐	☐	☐	☐	☐	☐	☐
h. Veterinary assistant	☐	☐	☐	☐	☐	☐	☐
Service Occupations							
a. Chef/cook	☐	☐	☐	☐	☐	☐	☐
b. Cosmetologist	☐	☐	☐	☐	☐	☐	☐
c. Childcare worker	☐	☐	☐	☐	☐	☐	☐
d. Teachers' aide	☐	☐	☐	☐	☐	☐	☐
e. Paralegal/legal assistant	☐	☐	☐	☐	☐	☐	☐

3. For each of the occupations for which your institution offers an **occupational program** in 1998-1999:

- Indicate in **column A** whether a list of **skill competencies** has been developed or adopted for the program.
- Indicate which one of the **columns under B** best describes how educators and industry (business, labor, and/or employers) were involved in developing or adopting the competencies. (Involvement may not be the same for all programs.)

Occupation area/occupation	A. Has a skill competency list been developed or adopted?		B. Which best describes how educators and industry were involved in developing or adopting the competency list?				
	Yes	No	Done exclusively by individual course instructors	Done exclusively by group(s) of educators	Done primarily by educators with industry input	Done with about equal educator and industry input	Done primarily/ exclusively by industry
			(Check only ONE in each row.)				
Business & Marketing Occupations							
a. Accountant/bookkeeper	☐	☐	☐	☐	☐	☐	☐
b. Administrative assistant/secretary	☐	☐	☐	☐	☐	☐	☐
c. Restaurant/food service manager	☐	☐	☐	☐	☐	☐	☐
d. Sales associate/manager	☐	☐	☐	☐	☐	☐	☐
Technical & Mechanical Occupations							
a. AC/heating/refrigeration repair technician	☐	☐	☐	☐	☐	☐	☐
b. Auto body repairer	☐	☐	☐	☐	☐	☐	☐
c. Automotive mechanic/technician	☐	☐	☐	☐	☐	☐	☐
d. Computer programmer	☐	☐	☐	☐	☐	☐	☐
e. Computer graphic designer	☐	☐	☐	☐	☐	☐	☐
f. Computer technician	☐	☐	☐	☐	☐	☐	☐
g. Electronics technician	☐	☐	☐	☐	☐	☐	☐
h. Engineering technician	☐	☐	☐	☐	☐	☐	☐
i. Drafter or CADD operator	☐	☐	☐	☐	☐	☐	☐
j. Machinist	☐	☐	☐	☐	☐	☐	☐
Building Trades							
a. Bricklayer or mason	☐	☐	☐	☐	☐	☐	☐
b. Carpenter	☐	☐	☐	☐	☐	☐	☐
c. Electrician	☐	☐	☐	☐	☐	☐	☐
d. Plumber	☐	☐	☐	☐	☐	☐	☐
e. Welder	☐	☐	☐	☐	☐	☐	☐
Health/Life Sciences Occupations							
a. Emergency medical technician	☐	☐	☐	☐	☐	☐	☐
b. Medical or dental assistant	☐	☐	☐	☐	☐	☐	☐
c. Nurses' aide or home health aide	☐	☐	☐	☐	☐	☐	☐
d. Licensed practical (vocational) nurse	☐	☐	☐	☐	☐	☐	☐
e. Registered nurse	☐	☐	☐	☐	☐	☐	☐
f. Medical/life science lab technician	☐	☐	☐	☐	☐	☐	☐
g. Agriscience technician	☐	☐	☐	☐	☐	☐	☐
h. Veterinary assistant	☐	☐	☐	☐	☐	☐	☐
Service Occupations							
a. Chef/cook	☐	☐	☐	☐	☐	☐	☐
b. Cosmetologist	☐	☐	☐	☐	☐	☐	☐
c. Childcare worker	☐	☐	☐	☐	☐	☐	☐
d. Teachers' aide	☐	☐	☐	☐	☐	☐	☐
e. Paralegal/legal assistant	☐	☐	☐	☐	☐	☐	☐

4. For each of the occupations for which your institution offers an **occupational program** in 1998-1999:

- Indicate in **column A** whether that program is accredited by an industry, business, or trade organization (e.g., the National Automotive Technicians Education Foundation).
- Indicate in **columns under B** what credentials students in each program can work toward. (For example, if a nursing program prepares students to take a state licensing exam, check that a "state registration, license, or certificate" is available.) Include credentials that may be attained through non-credit courses.

Occupation area/ occupation	**A. Check if program is accredited by industry, business, or trade**	**B. Credentials that students in each program can work toward:**				
		Associate's degree	Institutional certificate/ diploma	State registration, license, or certificate	Industry/ trade certificate or diploma	Company certificate (e.g., NOVELL)
		(Check ALL that apply in each row.)				
Business & Marketing Occupations						
a. Accountant/bookkeeper	☐	☐	☐	☐	☐	☐
b. Administrative assistant/secretary	☐	☐	☐	☐	☐	☐
c. Restaurant/food service manager	☐	☐	☐	☐	☐	☐
d. Sales associate	☐	☐	☐	☐	☐	☐
Technical & Mechanical Occupations						
a. AC/heating/refrigeration repair technician	☐	☐	☐	☐	☐	☐
b. Auto body repairer	☐	☐	☐	☐	☐	☐
c. Automotive mechanic/technician	☐	☐	☐	☐	☐	☐
d. Computer programmer	☐	☐	☐	☐	☐	☐
e. Computer graphic designer	☐	☐	☐	☐	☐	☐
f. Computer technician	☐	☐	☐	☐	☐	☐
g. Electronics technician	☐	☐	☐	☐	☐	☐
h. Engineering technician	☐	☐	☐	☐	☐	☐
i. Drafter or CADD operator	☐	☐	☐	☐	☐	☐
j. Machinist	☐	☐	☐	☐	☐	☐
Building Trades						
a. Bricklayer or mason	☐	☐	☐	☐	☐	☐
b. Carpenter	☐	☐	☐	☐	☐	☐
c. Electrician	☐	☐	☐	☐	☐	☐
d. Plumber	☐	☐	☐	☐	☐	☐
e. Welder	☐	☐	☐	☐	☐	☐
Health/Life Sciences Occupations						
Emergency medical technician	☐	☐	☐	☐	☐	☐
b. Medical or dental assistant	☐	☐	☐	☐	☐	☐
c. Nurses' aide or home health aide	☐	☐	☐	☐	☐	☐
d. Licensed practical (vocational) nurse	☐	☐	☐	☐	☐	☐
e. Registered nurse	☐	☐	☐	☐	☐	☐
f. Medical/life science lab technician	☐	☐	☐	☐	☐	☐
g. Agriscience technician	☐	☐	☐	☐	☐	☐
h. Veterinary assistant	☐	☐	☐	☐	☐	☐
Service Occupations						
a. Chef/cook	☐	☐	☐	☐	☐	☐
b. Cosmetologist	☐	☐	☐	☐	☐	☐
c. Childcare worker	☐	☐	☐	☐	☐	☐
d. Teachers' aide	☐	☐	☐	☐	☐	☐
e. Paralegal/legal assistant	☐	☐	☐	☐	☐	☐

THANK YOU. PLEASE KEEP A COPY OF THIS SURVEY FOR YOUR FILES.

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